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THE CANADIAN CHARTERED ACCOUNTANT

BUSINESS & ECONOMICS
AUG 1955

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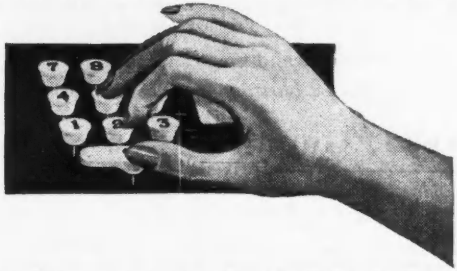

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THE CANADIAN CHARTERED ACCOUNTANT

VOL. 67, NO. 2, AUGUST 1955

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IN THIS ISSUE

D. G. CAMPBELL AND W. W. PREST

D. G. Campbell and W. W. Prest, authors of the article "A Costing System for a High Power Research Reactor", claim that their present accounting system is geared to any size of reactor. They are, however, the first to admit that the accounting treatment will probably have to be amended to keep abreast of the complexities of such a vast enterprise as the atomic energy plant at Chalk River. Even now plans are going ahead for the construction of a new reactor called NRU, the cost of which will be more than $8½ million. In addition, the development staff is studying the feasibility of 100,000 KW power reactors in the near future.

Both Mr. Campbell and Mr. Prest have been employed by Atomic Energy of Canada Limited for a number of years; the former is secretary treasurer and the latter is cost accountant and internal auditor. They are members of the Ontario Institute of Chartered Accountants, having been formerly associated with Price Waterhouse & Company and Clarkson, Gordon & Company, respectively.

G. PYRKE POWERS

G. Pyrke Powers, the author of "Electronics — The New Concept", is responsible for electronic data processing research for Ford of Canada Limited and is at present studying its possible future application for the company.

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Let's Talk

Common Language Machines now enable the business office to carry out a complete clerical process through a series of automatic machine operations. A peep at what the future holds for office routines is given in Moore's attractively printed brochure No. X. It describes an integrated Order-Billing-Shipping system which was designed by a large paper products manufacturer . . . and uses Moore business forms. It is one of the most efficient systems in operation, and is quietly making history with improved results and lowered costs.

The System

The system is one of receiving orders at a central control at the home office and assigning them to the various mills for processing . . . with the prime objective being *speed* and *accuracy*. The original order is prepared manually by the salesman on a Moore 4-part Speediset Sales Order.

Preparing the Shipping Order: When the order is accepted, a master tape containing fixed customer information is removed from a file (or prepared, if the customer is a new one)

and fed into a Flexowriter. The typist manually types item specifications on the Shipping Order, and the Flexowriter automatically types the fixed information, while simultaneously preparing a punched tape containing all order information. The master tape of fixed customer information is returned to the file for use in preparing future orders.

Assigning the orders to the mills: Part 2 of the typed Shipping Order and the new punched tape are sent to a teletype operator who uses the tape to transmit the order to the proper mill.

The mill gets the order: Orders come over the teletype network, automatically printing on a Moore 4-part Shipping Form (Warehouse Release and 3 Bills of Lading). This gives the mill complete shipping instructions and a record control with no extra writing operations.

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Forms

shipments released the day before. This summary is used for important internal controls.

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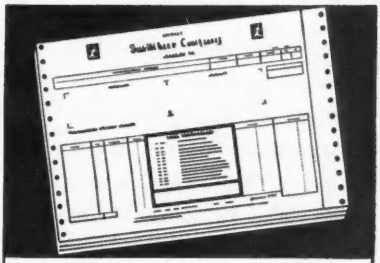

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machine and this makes it all the more necessary for the accountant to become acquainted with its more important developments.

Mr. Powers has been with Ford of Canada for the past 20 years and since 1948 has devoted his time to the study of methods, assisting in the organization of a centralized tabulating service department, the largest industrial installation in Canada. His article offers interesting and factual material to those who may be considering installing such equipment in their operations.

C. G. CHAMBERS AND U. E. HOUGHLAND

In the space of a quarter century the great plywood industry of the Pacific North West has grown literally from scratch to producing many million square feet annually of the "wooden sandwich" material. Veneers vary from less than one hundredth of an inch up to one quarter of an inch or even more in thickness. Here is an industry that uses great quantities of dryers, sanders, glues, adhesives and other supplies.

In their article "Accounting for the Plywood Industry", authors Chambers and Houghland have described a simple method of dealing with plywood costs. C. G. Chambers became a member of the Institute of Chartered Accountants of British Columbia in 1934 and since 1941 has been with MacMillan and Bloedel Limited. U. E. Houghland was admitted to the British Columbia Institute in 1936 and has been a partner in Price Waterhouse & Company since 1948.

This is the third in a series of articles on accounting for the British Columbia forest industry. It is hoped to publish another in the series during the early months of 1956.

THE CANADIAN CHARTERED ACCOUNTANT

Article Writing Competition

THE CANADIAN CHARTERED ACCOUNTANT announces that it will sponsor an Article Writing Competition for students and chartered accountants who have obtained their certificates since January 1, 1945. Contestants may write on any subject of their choice relevant to the field of accounting, auditing or taxation.

Articles may be written in English or French.

• • • • •

Prizes: First prize $300; second prize $200; third prize $100.

Closing date: Midnight on February 29, 1956.

Eligibility: The contest will be open to:

(1) A student in accounts of any provincial Institute in Canada or a candidate for the Diploma of Licentiate in Accountancy of one of the 3 recognized Quebec Universities who is presently employed by a practising chartered accountant in Canada.

(2) A member in good standing of the C.I.C.A. who initially obtained his certificate of admission to a Provincial Institute in Canada or to a recognized overseas Institute since January 1st, 1945 (except members of the staff of the Canadian Institute of Chartered Accountants).

Note: Anyone intending to enter the contest should communicate with the **Executive Secretary, The Canadian Institute of Chartered Accountants, 69 Bloor Street East, Toronto,** who will furnish the official announcement and a memorandum of additional instructions.

NOTES AND COMMENTS

Quebec Institute after 75 Years

On July 24 the Institute of Chartered Accountants of Quebec celebrated its 75th anniversary and chartered accountants everywhere will join in extending congratulations and sincere good wishes to the Quebec Institute on the attainment of this important anniversary.

The Canadian Chartered Accountant has published in this issue a brief history of the Institute. It has been written by S. R. Campbell who next year will have been a member of the Quebec Institute for 50 years and is its third oldest living member.

Magazine's New Columnists

Kenneth M. Place and Professor P. C. Briant, both of Montreal, have been named editors of departments to appear regularly in *The Canadian Chartered Accountant*. Mr. Place will handle a new department of interest to the chartered accountant in industry which, beginning this month, will be published alternately with Practitioners Forum. Professor Briant will take over Current Reading, a monthly department on current accounting literature.

Mr. Place became a C.A. in 1940 and is first assistant treasurer of Du Pont Company of Canada. He is a member of the National Association of Cost Accountants, the Institute of Chartered Accountants of Quebec and the Society of Industrial and Cost Accountants.

Professor Briant has been on the McGill University teaching staff since 1951. He is a member of the American Accounting Association, the American Economic Association and the American Finance Association. He became a member of the Institute of Chartered Accountants of Quebec in 1953 and at the present time serves on that Institute's Education and Tuition Committee and the Board of Examiners. He is a director of McGill University Extension Business Administration Course and a sessional lecturer in accounting at Sir George Williams College in Montreal.

Proposal for Change of Name

A proposal to change the name of the American Institute of Accountants to the American Institute of Certified Public Accountants will be voted on by the membership at the annual meeting in October. The main reason for the change is to emphasize the fact that the Institute is the national organization of C.P.A.'s.

Guest Editorial

This month's guest editorial "The Universities and the Profession" was contributed by a team of four members on the teaching staff at Queen's University, Kingston. It was written before the authors had knowledge of the Winnipeg conference of university representatives to be called this month by the Canadian Institute of

Chartered Accountants and the Society of Industrial and Cost Accountants. The meeting is being held to review the whole field of accounting education.

Reports of English Public Companies

For the second year *The Accountant* annual awards for the two best presented annual reports of public companies were presented by the Lord Mayor of London before a distinguished gathering at the Mansion House, London. This year's awards were made to the Ford Motor Company Limited and Unilever Limited. One of the awards in future years will be made to "the smaller company" producing a simpler set of accounts.

Tax Review Editor

Melville Pierce, former editor of *The Canadian Chartered Accountant* and present editor of The Tax Review, has opened his own office for the practice of the law profession at 306 Paris Bldg., Portage at Garry, Winnipeg.

In the News

The appointment of WALTER L. GORDON as chairman of the five-man Royal Commission to look into Canada's economic future has been officially confirmed. Mr. Gordon is a senior partner of Clarkson, Gordon & Company. Specific terms of reference direct the commission to study:

- Developments in the supply of basic raw material and energy sources.
- The growth to be expected in Canada's population and changes in its distribution.
- The prospects for growth and change in domestic and external markets for Canadian products.
- Trends in productivity and standards of living.
- Prospective requirements for industrial and social capital.

The commission is not dealing with short term problems.

The appointment of KENNETH L. CARTER of McDonald, Currie & Company, Toronto to a three-man committee to study a better method of levying federal sales and excise taxes has been announced by Finance Minister Walter Harris. Mr. Carter is a past president of the Canadian Tax Foundation.

J. GRANT GLASSCO, president of the Canadian Institute of Chartered Accountants, has been appointed to the University of Toronto Board of Governors. Announcement was made on July 5 by the Provincial Government of Ontario. Another chartered accountant, J. R. M. WILSON, has been appointed to the Museum Board which is responsible for administration of the Royal Ontario Museum.

G. FITZPATRICK DUNN, of Ismay, Boiston, Dunn and Company, Victoria, B.C., has been elected president of the Victoria Chamber of Commerce. Mr. Dunn will assume his new office in September, succeeding Stuart Keate, publisher of the Victoria *Daily Times*.

JOSEPH HOPKINSON, assistant auditor-general of Canada and a member of the Ontario and Manitoba Institutes, has been appointed accounting adviser to the Minister of Finance of the Imperial Ethiopian Government. His work will consist of organizing a public accounts and audit system. He has been with the auditor-general's department since 1926 and represented Canada on the first audit board of the International Monetary Fund.

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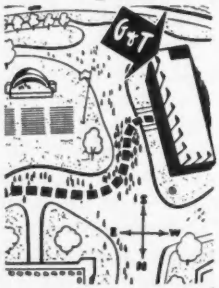

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Editorial

THE UNIVERSITIES AND THE PROFESSION — A GUEST EDITORIAL

IN CANADA, the accounting profession has not yet made any concerted approach toward the universities concerning the kind of courses the latter should conduct to turn out graduates likely to succeed in the accounting profession. The profession might usefully ask itself whether an aloof attitude toward higher education will ever serve its own best interests.

One of the great advantages of a university training in accounting is that it places accounting among other subjects. In this way the student is given a perspective of the subject in relation to other fields of study. A review of those who have made lasting contributions to the profession, and of those who enjoy their daily work, will show that they are able to visualize their role as accountants against a backdrop of the many other interests in the community they serve.

Assuming it is desirable that members of the profession should have a university education, two questions need to be considered. Would such a scheme tend to increase the number of candidates with a university degree? And does a scheme of specialization in accounting provide the sort of university education that a professional accountant should have? On the first point it may be noted that the exemptions already allowed for a Commerce degree are quite generous, and it is therefore doubtful whether such a scheme would induce any larger number of entrants to go to college. On the second point it can be argued that the profession needs the man of broad education as well as the specialist. It might be to the long-run advantage of the profession to equate the exemption for an Arts degree with that for a Commerce degree, rather than to widen the discrimination still further.

There are a number of ways in which the profession can assist the universities in their role of providing much of the instruction,

literature and experimentation in ideas that are essential to a profession. Some accounting firms have provided scholarships for undergraduates; there exists a need for many university entrance scholarships to attract the right students into university studies in commerce and finance with a view to their possibly entering the accountancy profession. Then, too, there is a need for more exchange of personnel between firms of public accountants and universities. The university instructor should be able to take a leave of absence occasionally and go back to work for a firm of practising accountants, to bring him up to date on methods; young accountants who have recently obtained their C.A. degree should be encouraged to take a year's leave of absence and try teaching at university. It would be an exchange which should be beneficial all round.

• • • • •

Even if the profession of accountancy is rapidly maturing – and we think it is – there is still no room for complacency with regard to educational standards and requirements. A mature profession is not a stationary one, but must constantly advance if it is not to be outrun by the needs of the times. This may mean, although not necessarily, that standards of admission will always tend to rise; but without doubt it does suggest that the calibre of candidates should steadily improve, and probably the number of entrants as well.

Concurrent advances in quality and quantity are hard to accomplish in any field, but the difficulty does not eliminate the need, and the accounting profession must seek ways of progressing in both aspects.

In this development, education can be the catalyst, as it is in so many other fields. The universities can be used to give potential accountants the broad and various backgrounds they should have. They can screen the fit from the unfit. They can blend general education and professional education, if that is what is desired. They can cooperate in working out dovetailing arrangements of course work and interneship. These are not new ideas to the universities, for they are already doing just these things in cooperation with various professions, and to some extent in accountancy.

Perhaps that word cooperation is the key. The universities cannot determine professional requirements as to education, but they can provide the education required. It is up to the profession to decide what is wanted, and in making that decision we may perhaps find that soon the profession will, by choice or necessity, find its candidates entirely in the ranks of the university graduates. If that is to be the case, we will find a better solution by making the choice than by waiting until necessity has decided for us.

A Costing System for a High Power Research Reactor

D. G. CAMPBELL AND W. W. PREST

THE PURPOSE of this paper is to present an outline of the costing system for a high-power research reactor as part of the program of instruction for supervisors, operators and costing staff, to indicate how information required from the field is accumulated and arranged to show the cost of production of the main reactor product – plutonium-239 – and to indicate the methods of arriving at the costs of irradiating various materials to produce useful isotopes such as cobalt-60.

While the construction of the dual purpose nuclear reactor (production and research) was still in its early stages, the management of Atomic Energy of Canada Limited – Chalk River Project foresaw the need of developing an applicable costing system. This new reactor is commonly referred to as NRU.

At the time of this decision, there was already in operation a highly powered research nuclear reactor. This reactor is commonly known by the letters NRX.

Since the basic principles and techniques for both reactors are similar, it was decided that a costing system should be developed for the research reactor and applied to the new dual purpose reactor.

Reactor Principles

When the nucleus of a uranium-235 atom is struck by a neutron, it fissions or splits into two fission fragments. These are nuclei of radioactive isotopes of a number of elements. At the time of this splitting, there is an emission of about two and one half neutrons. These are used to maintain the chain reaction; one is used for the chain reaction, and others for capture in materials and escape.

A schematic diagram of a fission chain reaction is shown in figure 1.

The neutrons released by the splitting of uranium-235 perform the following principal useful functions:

(1) The splitting of further uranium-235 atoms in order to sustain the chain reaction.

(2) The bombardment of uranium-238 atoms to produce eventually plutonium-239.

(3) The bombardment of materials which are inserted in the reactor for the purpose of producing radioactive isotopes which are used in the research, industrial and medical fields, e.g. the bombardment of cobalt-59 to produce cobalt-60.

(4) The production of neutron beams for research experiments.

Other neutrons are absorbed by the reactor materials, and still others escape to the surrounding structure such as the concrete shielding.

The NRX Reactor

NRX utilizes the splitting of uranium-235 atoms and plutonium as it is formed, to sustain a chain nuclear reaction and to produce various products.

During the splitting of atoms, energy is formed which is transformed into heat which builds up temperatures very rapidly unless controlled by some cooling mechanism.

The fission fragments or products are highly radioactive, emitting a variety of rays. The highly penetrating gamma ray is, of course, the most difficult one to handle, although extreme care must be taken with all forms of radioactivity. Precautions to keep free radioactivity at a low level are necessary not only as a health measure but also as a vital requirement of research and monitoring experiments.

It is therefore necessary for the design of a high power research reactor to incorporate extensive provisions for cooling and for sheathing. Some idea of the extent to which cooling and sheathing have been provided for in NRX can be obtained from figure 2.

The replacement cost of NRX is approximately $11,000,000. Annual operating costs including overheads but excluding the cost of uranium rods and depreciation are approximately $1,250,000.

The raw material for this reactor is natural uranium, comprised of approximately 99.3% uranium-238 and .7% uranium-235, and is delivered to the reactor in the form of rods encased in aluminum tubes.

These rods are inserted in a tank, called the "calandria", about eight feet in diameter and ten feet high, which appears much like a fire-tube boiler.

In order to slow the neutrons given off by the splitting of an atom of uranium from about 10,000 miles per second to about one mile per second, at which speed the neutrons can more easily split other uranium-235 atoms to continue the chain reaction, a "moderator" is required. In the cases of NRX and NRU, heavy water is used as the moderator. Heavy water is one of the most efficient materials known for this purpose and by the use of this material a smaller reactor structure and a higher neutron "flux" or density is achieved than is possible with other moderators such as graphite.

The neutron density in NRX increases from the outside to the centre of the calandria at which point the flux is in the order of 60,000,000,000,000 (6×10^{13}) neutrons per square centimetre per second.

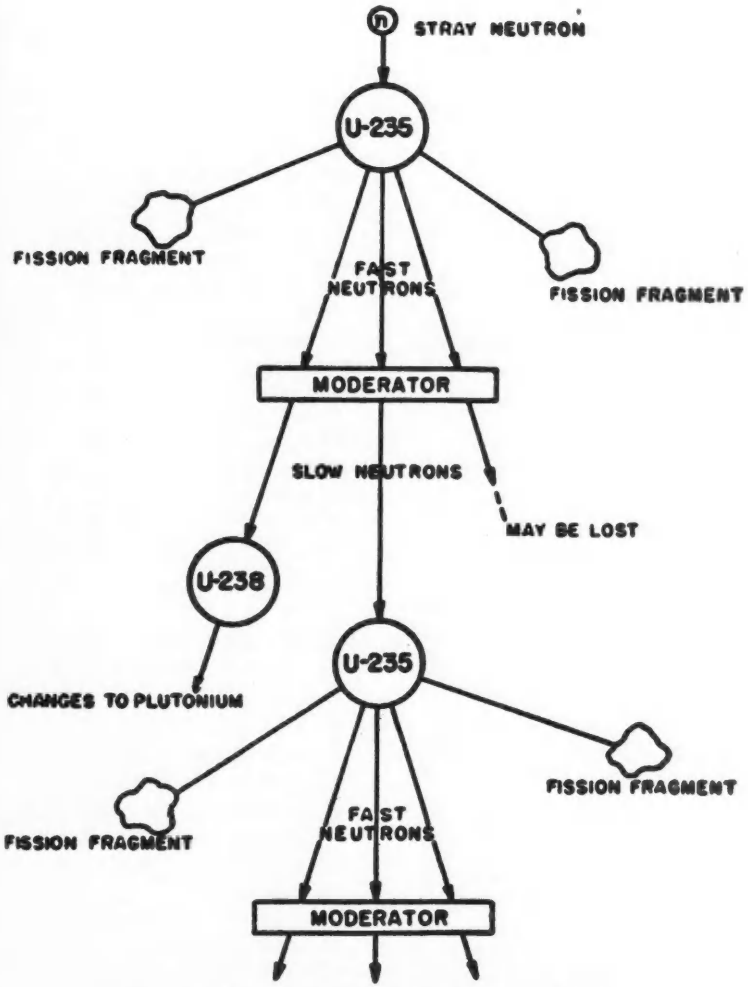
NRX operates at present at a power level of 40 megawatts. Operations can be carried on at any level up to the maximum by means of inserting rods of neutron-absorbing materials such as boron, cadmium, or materials for irradiation.

Products

Fissionable Materials — Plutonium-239 and uranium-233 which are produced by neutron bombardment of uranium-238 and thorium-232.

Fission Products — The elements resulting from the splitting of the fissionable material — mainly uranium-235 in the natural uranium. The most common and most useful of these are strontium-90 and cesium-137.

FIGURE 1



SCHEMATIC DIAGRAM OF FISSION CHAIN REACTION USING A MODERATOR TO SLOW NEUTRONS TO SPEEDS MORE LIKELY TO CAUSE FISSION

Radioactive Isotopes — Isotopes of stable elements are produced by bombardment with neutrons. Radioactive cobalt-60 is produced from stable cobalt-59; iodine-131 is produced from stable tellurium.

Differences from Ordinary Industrial Operations

There are four main differences between the operation of NRX and an ordinary industrial process.

(1) NRX is designed to provide facilities for research purposes.

(2) The degree of radioactivity involved renders many parts of the reactor unapproachable for normal inspection and maintenance and has necessitated the establishment of extremely complicated safety circuits and extensive safety measures. The high degree of radioactivity is the reason that rods have to be stored under water in a "trench". A period of about six months after removal from the reactor is required before the further stages of processing can be performed in the chemical extraction plant, and even this process requires similar shielding.

(3) Severe security measures have to be employed in the production of classified materials.

(4) The quantity of plutonium produced in a given period or in a given rod from installation in the reactor to removal can be calculated only to within about a 10% degree of accuracy. This necessitates adjustments of quantities in the succeeding stages of processing.

Problems of Reactor Operation

The chief problems which relate to reactor operation are the following:

(1) *Power Output* — This is limited in any given reactor to the temperature and pressure limitation of materials in the reactor and rate of heat removal. The expansion and corrosion of metal components must be controlled.

(2) *Shutdowns* — Non-productive or shutdown time results from certain characteristics of nuclear reactors, and is also closely tied in with the following paragraph.

(3) *Safety Circuits* — An extensive system of safety circuits has been set up for the purpose of preventing accidents. Operating hazards which are indicated by the safety circuits must be investigated and cleared up before normal operations are resumed. This procedure leads to the problem of shutdown time which is set out above, and also tends to produce relatively high operating costs owing to the great extent of instrumentation and remote control required.

Purpose of Cost System

Among the purposes of the costing system are the following:

(1) To develop a costing system applicable to the operation of the new production reactor — NRU.

(2) To maintain a reasonably accurate costing system applicable to the present high power research reactor — NRX.

(3) To provide management with adequate control of operating expenses.

(4) To provide management with adequate indication and control of unit costs.

Control of operating expenses is achieved to some extent by means of the present methods of budgeting.

FIGURE 2

COOLING WATER TRAVELS DOWN ALUMINUM TUBES CONTAINING URANIUM RODS
SHUT-OFF ROD
CONTROL ROD
COOLING WATER FROM OTTAWA RIVER
CONCRETE SHIELDING
ALUMINUM SHIELD
CAST IRON SHIELDING
ALUMINUM TANK (CALANDRIA) CONTAINING HEAVY WATER
BEAM OF NEUTRONS FOR RESEARCH EXPERIMENTS
GRAPHITE NEUTRON REFLECTOR
WARM WATER
FOUR CONCRETE SHIELDS WEIGH 17 to 19 TONS EACH
TWO WATER-COOLED STEEL SHIELDS EACH 15 TONS
MATERIAL TO BE BOMBARDED BY NEUTRONS IS PUT IN ALUMINUM BALL AND INSERTED HERE
SELF-SERVE UNIT PLACES BALL AT REQUIRED DISTANCE FROM TANK
CAST IRON SHIELDING
WATER-COOLED STEEL SHIELDS
WHEN BOMBARDMENT COMPLETED BALL ROLLS OUT HERE INTO CONTAINER

THE NRX REACTOR

The costing system, however, is concerned with the operating costs of productive processes in greater detail than is at present provided by the current budgeting methods. The costing system also provides management with the data relating to the unit product costs of individual processes.

Type of Cost System Employed

The costing system in use at present is a modified process cost system based on historical costs. It presents a compromise between two other alternatives.

One of these alternatives was a job order costing system in which a separate job number would be used for each rod of which there are approximately 200 inserted in the reactor, with the costs attributable to each rod charged to the appropriate job number.

The other alternative would have been the employment of a process costing system in which the assumption would have been made that all rods are identical and that the average cost of production per rod would be a figure which would indicate reasonably accurately the degree of efficiency prevailing in NRX operations during a particular cost period.

The first alternative would have figuratively swamped the cost accounting section with a great amount of detailed costing with a consequent delay in the computation of unit costs. The second alternative would permit no segregation of the most important factor bearing on cost variations from period to period, i.e. the cost of uranium.

The costing system in current use was chosen after consultation with the management of the Industrial Operations Division. This system provides for the accumulation of average raw material costs per rod for each batch of uranium rods and for the handling of the other elements of cost – pile handling and irradiation – on a process cost basis per rod and per megawatt hour respectively.

The number of megawatt hours of energy applicable to the production of plutonium-239 as compared with that applicable to the production of other isotopes and to research experiments is a measure of the number of neutrons used in the production of each product. The megawatt hour basis has therefore been used to allocate the operating costs of the reactor to the various products.

Thus the advantage of both a job cost and process cost system are obtained in the arrangement at present in effect whereby the major variations in cost are recorded with a minimum of effort.

It is hoped that a cost system applying standard costs per rod and per megawatt hour will eventually be installed. This should further reduce the time required in the preparation of statements of unit costs of production.

Elements of Cost

The elements of the cost of production of plutonium are:

(1) Raw material
(2) Rod handling
(3) Pile irradiation.

(1) Raw Material

There are at present nine types of uranium rods designed for use in the NRX reactor. Each type of rod represents a separate lot or batch of rods. The cost per rod of any one lot is generally different from the cost per rod of any of the other lots owing to changes in the price of uranium and to changes in the method of fabrica-

tion. Rod costs include the cost of the uranium metal (ingots or billets), the cost of rolling, sheathing and assembly, and the cost of uranium processing losses.

The total cost of rods removed from raw material storage to the handling and assembly section for inspection, for the fitting of valves, etc. is the total of the amounts obtained by multiplying the average cost per rod by the total number of rods for each type of rod so transferred. The total cost of the raw material content (as distinct from handling and irradiation costs) of uranium rods transferred from one stage of processing to another is similarly computed.

(2) Rod Handling

The direct costs of rod handling and assembly before irradiation are accumulated in an operating account by classification of expense.

The direct costs of rod handling and storage after irradiation are similarly accumulated.

The transfers of handling costs from process to process and from the trench are made on the average cost basis.

(3) Pile Irradiation

The items of cost entering into pile irradiation may be summarized as follows:

Direct-costs of this category are those that have been charged directly to the reactor departmental operating accounts.

Manufacturing overhead – costs of this nature represent the portion applicable to the NRX reactor of the expense relating to certain services which can be considered as being comparable with manufacturing overhead costs which would occur in an industrial operation.

These manufacturing overhead costs are classified as follows:

(a) heat, light, power and water,
(b) divisional supervision,
(c) reactor safeguards,
(d) routine chemical control,
(e) engineering design,
(f) workshops, estimating and planning,
(g) plant maintenance,
(h) building maintenance.

The costs of the above service departments are allocated in total to the NRX reactor, to the Chemical Extraction Branch, to the Isotope Production Branch and to research on various bases.

Controllable costs – this item is the sum of the direct costs and the manufacturing overheads and represents what in industrial practice would be termed the cost of goods manufactured.

Other overhead – the cost of the remaining service branches are accumulated and allocated to the other project activities on various bases.

These other overhead services are as follows:

(a) radiation hazards control,
(b) transportation,
(c) accounting, personnel and office services,
(d) security, guarding and fire protection,
(e) purchasing and stores,
(f) medical services,
(g) Deep River townsite,
(h) process engineering.

The above services are either administrative in character or embody functions which are peculiar to the project. Examples of this latter type of activity are radiation hazards control and transportation. The effort relating to radiation hazards control is a characteristic of operations in-

volving radioactivity while the operation and maintenance of transportation vehicles is necessitated by the isolated location of the project.

Total costs – the total pile irradiation costs is the sum of controllable costs and other overhead.

It should be noted that no provision has been made in the cost system at present in use for the inclusion of costs relating to the depreciation of the NRX facility.

The capital costs of this facility had been charged to special research and development expense when it was acquired, and the effect was to write off the capital costs upon construction instead of on an annual basis over the estimated life of the facility.

It is proposed that the capital costs of NRU be amortized on a straight-line basis over the estimated life of the various components of this asset, such as building, equipment, etc. A monthly charge will therefore be established for depreciation of the NRU facility and included in irradiation costs.

Distribution of Irradiation Costs

The basis of distribution of the monthly costs of irradiation was chosen by the management of Industrial Operations when the present cost system was being installed. The monthly irradiation costs are distributed to the following functions according to the number of megawatt hours attributed to each:

Plutonium production
Plutonium shutdown
Cobalt-60 production
Isotope production
Research.

This basis of distribution was chosen for two reasons: (1) it gives a true indication of the proportion in which the neutrons are employed in the various uses; (2) the productive capacity of a reactor is limited by considerations relating to the high temperature of the metals contained in the rods and reactor structure when heat is generated by the chain reaction. Where the design of the reactor can permit of only a limited number of megawatt hours being generated in a given period of time, those megawatt hours not applicable to the production of the main product must be allocated to some other function in order to avoid a distortion of the unit cost of the main product.

The number of megawatt hours attributable to the production of plutonium is determined by the operations branches on the basis of applying to each uranium rod the monthly megawatt hour output and computing the sum. The megawatt hour output attributable to an individual rod position in the reactor varies according to the material placed in the rod position and generally inversely with the distance from the centre of the reactor.

The number of megawatt hours attributable to plutonium shutdown is arrived at by multiplying the capacity of the reactor (40 megawatts) by the number of hours of shutdown or idle time. Shutdown time is caused mainly by the formation of neutron-absorbing fission products which appear when reactor operations are stopped for a purpose such as rod removal or insertion. Such fission products are normally destroyed by neutron bombardment while the reactor is operating, and decay to reasonable levels in 24 to 48 hours when the reactor is down.

These fission products build up rapidly and unless the reactor can be

started within about half an hour of shutdown, operation is impossible for at least another 24 hours. This is known as the "poisoning out" of a reactor.

The number of megawatt hours attributable to the production of cobalt-60 is the total megawatt hour output of the plutonium fuel rods which are inserted for the sake of supplying neutrons for the irradiation of cobalt-59 plus the megawatt hours of potential output which has been lost because of shutdown time related to the handling of cobalt-59 capsules. If the cobalt is irradiated where normally an X-rod is in place, an additional charge is made for the loss of production from this particular position.

The number of megawatt hours related to each of the remaining functions set out above represents potential output which has been lost because of shutdown time related to the handling of particular isotopes and research experiments.

All of the data relating to the allocation of the potential monthly megawatt hour output of NRX is supplied to the cost accounting unit by the operation branches.

It will be noted that the only costs of irradiation which are normally charged to isotope production and to the various research experiments are those which relate to shutdown time since it is only this factor which would affect the irradiation costs attributable to the production of the main products—plutonium-239.

The total potential megawatt hour output should approach under optimum operating conditions 28,800 megawatt-hours for a 30-day month and average power level of 40 megawatts. This potential output is used as the denominator for allocating the total irradiation costs to the various products.

The portion of irradiation costs applicable to plutonium is the product of the cost per megawatt hour and the total of the megawatt hours applicable to plutonium production and to plutonium shutdown. Similarly the irradiation costs applicable to each of the above activities or products is determined by computing the product of the unit cost and the number of megawatt hours involved.

Chemical Extraction Costs

Costs related to the further processing of irradiated material in the chemical extraction plants are accumulated and allocated to the various products by methods similar to those outlined in connection with NRX.

The Effect of Cost Accounting on the Project

When the cost system was inaugurated in November 1951, there was very little indication of what to expect as far as the magnitude of unit production costs was concerned.

The cost system was in operation for three months before any unit costs were widely published. This precaution was employed to enable the cost accounting section to make sure that the system was operating smoothly and to enable the cost accountant to judge whether or not the monthly unit costs produced by the costing system were comparable.

The production of departmental and product costs produced a great deal of interest by the operating groups. Certain unit costs were far higher than those which had been anticipated, and as a result both the costing methods and the operating procedures were given further study. After the study of the operating pro-

cedures employed in producing certain isotopes, improvement in the production methods resulted with a corresponding reduction in the unit costs.

Unit costs produced by the cost accounting section are also used by the operations branches in comparing the operating efficiency between one month and another.

Information furnished by the cost accounting group is also used for the purposes of estimating the unit costs of proposed processes and are borne in mind in the setting of production policy.

GLOSSARY

Reactor — A structure which provides for the insertion of fissionable materials in such a manner as to sustain a controlled chain nuclear reaction. Such a structure may also be called a "Pile".

Fissionable — An adjective used to describe a material of which the atoms can be split into two more or less equal fragments by the bombardment of neutrons.

Neutron — A sub atomic particle having no electric charge and a mass of unity on the atomic scale. The particle is part of the nucleus and is released when an atom fissions.

Moderator — A material which slows neutrons to so-called "thermal" velocities. The moderator used in the Chalk River reactors is heavy water.

NRX — The high power research reactor at Chalk River. The code letters stand for the legend "National Research eXperimental".

NRU — The production reactor at Chalk River — "National Research Universal".

Megawatt Hour — The unit employed as a measure of the energy generated by the fissioning of uranium-235 atoms and appearing in the form of heat. In terms of a more common unit of electrical energy, one megawatt hour is equal to 1,000 kilowatt hours.

X-Rod — A rod of natural uranium with an aluminum sheath.

J-Rod — A rod of thorium metal or thorium salt.

Electronics -- the New Concept

G. PYRKE POWERS

IN THE PAST several years general comment praising the amazing capacities of "digital computers" (the arithmetic and memory machines) has become quite frequent; but the same praise usually carries the qualification that input and output is much too slow and that business use of such equipment could be ten years away.

The ten years must have been compressed or never existed, for the business system is already here with high speed inputs – 12,000 characters per second with magnetic tape; here with high speed outputs – 12,000 characters per second with magnetic tape; up to 1,000 lines per minute with printing mechanisms, and indications of even higher speeds in the near future. Printers are actuated for the most part by magnetic tape independently of the arithmetic and logical machines and, therefore, the printed output required will dictate the number of printers necessary in an E.D.P. [electronic data processing] system.

There are many E.D.P. systems and computers available today, but from the standpoint of application they fall into four general classifications:

1. "Punched card electronic calculators" in general use today are performing extension, cost analysis, payroll work, etc. This equipment does not use the stored program method of machine instruction and is incapable of automatic operation in the magnitude required for an E.D.P. system.
2. "Special purpose computer systems" are designed to perform a special function, such as department store inventory control, airline reservation recording, flight control and stacking of incoming flights over airfields, anti-aircraft range and target computation, etc.
3. Scientific systems were the original type of stored program computers and are designed to process complex mathematical problems, characterized by small input and output with a great number of computations in each problem.
4. The business system is generally designed to perform less complex mathematical problems but process large volumes of input and output data. Such systems differ greatly in capacity and cost. In that the principle of all the systems is similar, this article is based upon the large scale equipment in order to indicate more clearly their tremendous capabilities.

Delivery of such equipment can be obtained in approximately two years and the question is no longer one of availability but of application. Will such a system fit profitably into a given organization?

What is This New Concept?

What is the basic function of the electronic data processing system?

The new concept is that of giving accurate, completely detailed instructions to equipment of an electronic nature in order to process large volumes of data automatically, at a very high speed, to provide an end result such as:

- Inventory control, to give daily reporting of items requiring action, automatic float adjustments, etc.
- Customer invoicing, sales statistics and other related information.
- Automatic payroll and employee procedures.
- Automatic development of flexible budgets based upon standards and production rate.

The electronic data processing equipment built for such procedures has been informally misnamed "Giant Brain", "Electronic Brain", etc. — misnamed because it cannot think or use imagination. It is as intelligent only as the people in control. It can store or remember information accurately and recall such information upon command with electronic speed measured in microseconds (millionths of a second). It can make decisions if one outlines the basis. It can process any type of mathematical problem if one can explain the formula. The instructions for such equipment are known as programs.

This amazing machine skill, this stored program concept of automatic operation is the new horizon. Great speeds and the high degree of accuracy of such equipment can be considered as refinements and improvements over older types of office machines.

The principle of the stored program is basically simple, for it involves giving precise instructions to a machine with an infallible memory. The machine in turn will refer to its memory and do exactly what it has been told to do.

A Simple Analogy

What is a machine program like? It resembles to some extent the instructions a father might give his small son the first time he sends him to the supermarket. Even in this case the child has some knowledge of where to go, how to purchase and how to get home. If the child had never been down the street or in the store or had never purchased an item, the instructions would, in all probability, have to be very detailed and precise. The poor child would require a very good memory or the local gendarmerie would have a job on their hands. However, for the purpose of illustration, let us outline the instructions required to purchase the most economical can of tomatoes, fancy grade.

Assume that the father is standing at the front of the house, that the child is dressed and ready to go, and that the door is open. The father would say to the child:

1. Walk to the sidewalk.
2. Turn right and follow the sidewalk.
3. Walk to the first corner.
4. Turn left, to face the street.
5. Is there a car coming from the left? If there is, check until the traffic is clear, when traffic is clear go to next instruction.

6. Is there a car coming from the right? If there is, check left and right until traffic is clear, when traffic is clear go to next instruction.
7. Cross the street.
8. Turn right and follow sidewalk as it curves to the left.
9. Continue walking until you find store with the characters 7895 above the door.
10. Enter the store.
11. By walking down one aisle and up the next, locate the canned goods section.
12. Search the canned goods for tomato section.
13. Search the tomato section to find the fancy grade.
14. Note the quantity of the first brand.
15. Note the price of the brand.
16. Divide the price by quantity.
17. Remember the per ounce cost.
18. Do this for each brand.
19. Select the brand with the lowest cost.
20. Carry can to counter.
21. Pay clerk.
22. Reverse instruction #1 - 9 inclusive to return home.

Instructions even to children, especially the modern ones versed in space travel, are not detailed to this extent for they already have stored a considerable amount of knowledge and skills. The machine on the other hand has to start from scratch on every routine and knows absolutely nothing. The machine might require 1,000 simple job steps, no more complex than the above but of a more mathematical nature, to compute a man's pay, taking into consideration the many deductions and variables that appear in payrolls today. It is unlikely, however, that such a great number would be required for all the pays calculated.

What appears at this point to be a very lengthy process is performed at electronic speed by the machine, most job steps taking considerably less than a thousandth of a second to perform.

Four Categories of Machines

An electronic data processing system is made up of a group of machines that fall into the following four categories:

1. Equipment for preparing input data.
2. The computer.
3. Tape storage unit.
4. Printing equipment.

Incorporated in these machines are seven basic components.

INPUT

Punched card reader – provides a direct punched card input to the arithmetic unit or provides a means of converting punched cards to magnetic tape. Cards are read at 250 per minute.

Punched paper tape reader – paper tape readers are being made available for integration with common language machines.

Magnetic tape reader, writer – magnetic tape is made of either plastic or metal and coated with a material that can be easily magnetized or erased. The characters are recorded in the form of invisible magnetic spots in a pattern similar to the punches on punched paper tape. Magnetic tape is generally considered to retain information indefinitely, and such tape may be erased and reused thousands of times. The tape machine will read or write at the rate of 12,000 characters per second.

Control unit or console – the operator controls the system from the console and may alter instructions or introduce additional information into the computer as necessary. The computer, through the console, communicates with the operator indicating, for example, that it has stopped and why.

It may have run out of magnetic tape, received an illogical command, or made an error where it could not effect correction.

Memory or Storage

The main memory of large scale E.D.P. systems is very high speed in nature and is generally used to store instructions and intermediate results. The information is stored in the form of impulses and a group of them, like the holes in paper tape, form a character. Different manufacturers use different storage mediums: Univac in its earlier machines uses mercury delay lines; IBM 702 stores the information on the face of a small Williams or television tube. IBM 705, the latest large scale business type system to be announced, uses magnetic cores as does the latest Univac. Univac and IBM 702 can store 10,000 characters at one time, and IBM 705 can store 20,000 in the high speed memory. With the exception of magnetic cores this type of memory loses the information stored when the power is shut off.

In addition to the high speed memory, there is usually an auxiliary memory of medium access speed (length of time required to recall information or store it is generally measured in thousandths of a second or milliseconds). The auxiliary memory is generally a magnetic drum. The drum is a finely machined metal cylinder coated with a substance similar to that used on magnetic tape. Information in the form of magnetic spots is recorded in bands on the drum by recording heads and read in reverse manner by reading heads, one for each band. The drum revolves at high speed during operation; reading and writing on the drum is possible only while it is rotating. Information is retained on the drum after the power is shut off.

Magnetic tapes, punched paper tapes and punched cards are very useful methods of storing information, having an almost unlimited capacity. Product prices, and customers' names and addresses for an invoicing operation could be stored in this manner.

Arithmetic & Logical Unit

This component acts upon information as directed by the stored program, performs the required arithmetic, makes decisions and returns information to storage, or directs it to one or more of the system's output machines.

Control Unit or Console

In addition to being an input mechanism, communication between the operator and the machine and between the machine and the operator is accomplished primarily through the console.

Output

Magnetic tape recorders – the system may be programmed to record information on magnetic tape (same machine as described under "Input"). The tape may then be fed to a printing mechanism to produce printed reports or the tape to card converter if cards are required.

Card punch – punched cards as output may be obtained either by conversion from magnetic tape or with certain systems directly from the computer unit.

Printing – reports may be obtained from typewriters connected to the system but, because of low speed output, are generally used for control totals and very condensed reporting.

High speed printing mechanisms

that print a line at a time at speeds varying from 150 to 1,000 lines per minute are now available. These printers all operate from magnetic tape, and certain of them may be connected directly to the system as direct output.

Chief Differences from Standard Office Equipment

The operation of the aforementioned machines differs from office equipment in general use today in three major ways:

1. Completely automatic operation made possible by the stored program principle.
2. Very high speed operation which results in tremendous processing capacity.
3. Very high degree of accuracy effected by self-checking features that are incorporated, wholly or in part, in the machine design.

A very natural question at this time would seem to be: "Is this the automatic office of the future?" Certainly for those people that envision some type of robot that opens the mail, sorts it, distributes, acts upon it, etc., the answer has to be *no*. But others see office automation in the various stages of development, starting with manual typewriters, then electric; key driven calculators, then power driven punched card equipment. For these, E.D.P. systems are the next logical step. It may be safely said that such equipment will have greater impact on office procedures than all of the other developments combined, and it will do more to reduce clerical overhead and provide more decision-making information than has been possible in the past.

The new concept is two-fold; first, from the standpoint of equipment, its speed, capacity and accuracy; secondly, and equally important, from a procedural point of view.

For the purpose of economical processing, procedures from different organizational areas will be combined. This, of course, does not change the management prerogative in the areas involved but does change the location and method for performing high volume, monotonous and repetitious work. This frees management personnel to perform more important functions.

The Effect on One Typical Procedure

A procedure to include all the tangible administrative problems in connection with a company's employees will serve as an example of the possibilities inherent in the electronic data processing approach. In a sense it is a payroll procedure because the pay cheque will be one of the main end results, but I prefer to think of it as: *"The Employee Procedure"*.

What overall information is required from such a procedure? In all probability the list will resemble this:

Payroll cheques
Payroll register
Labour distribution
Bond deduction list
Absenteeism record
Vacation eligibility record
Vacation pay cheques
Union check off list
Overtime premium report
Seniority list
Name and address list
Group insurance information (by age groups etc.)
Medical plan payment
Unemployment insurance cumulative record
Pension information.

It may even be necessary to have many more kinds of information, de-

pending upon individual problems or requirements. The present procedures would have to be carefully reviewed in detail and then very clear ly defined with all variances from the general method shown. This review will most likely disclose that basic information about the employees of the company is recorded in many different forms and in many different departments. Much of it will be of a repetitious nature and some of it may be no longer required.

A new procedure is then developed to provide the E.D.P. system with the raw information necessary to provide the required end results.

Programs must be written for the system so that actual E.D.P. operation will be completely automatic. This is a long and laborious task. The programming time required depends entirely upon the complexity of the problems involved. The completeness of the procedure definition may be affected by the degree of mechanization used in the prior method; for example, a punched card type payroll using a calculating punch such as IBM 604 is generally a well-defined procedure to begin with and, therefore, is more easily converted than a manual type payroll.

In order to show briefly the effect of E.D.P. on financial procedures, a method is set forth here that could be used to produce the payroll cheque and register. Such an explanation should indicate the E.D.P. approach to business procedures and the many uses that can be made of consolidated employee information.

Let us assume it has been decided, as a result of the detailed procedure study, that an "exception type" payroll will be the method best suited for producing the cheques and register.

All the employee information must be stored on magnetic tape to serve as a master file record. The tape record for each employee could be 300 characters in length, or longer if necessary, and will contain information such as:

Master number
Name and address
Seniority date
Birth date
Department number
Rate of tax
Income tax category
Regular bond deduction
Regular charity deduction
Vacation pay credit
Year-to-date gross earnings
Year-to-date income tax deducted
Year-to-date absenteeism

The master tape for a 12,000 man payroll using the 300 character record length per employee would have to contain 3,600,000 characters. If it were possible to transfer such information to punched cards using 80 columns per card and without duplicating information, 45,000 cards and 15 card file drawers for filing would be required. This information can be stored on one reel of magnetic tape 2,400 feet long, weighing seven and a half pounds.

A record of this nature generally requires a considerable amount of work to keep the information current. In this plan such up-dating is done at the time of processing the payroll.

This then is the information the system requires to process the payroll:

1. Payroll Program

The instructions to the machine will direct the system in every de-

tail in the processing of the payroll. Indication of the normal work week would be included in the program; e.g. during peak season the normal work week could be 40 hours standard time plus 12 hours overtime. During another period the normal work week might be 32 hours.

2. The Master Magnetic Tape

This provides the system with all the static information about the people to be paid, together with year-to-date information that requires up-dating to include the current pay.

3. The Exceptions

These may be fed to the system in the form of cards or tape, whichever is most practical for the individual system depending upon the volume involved. Exceptions for this purpose are:

(a) hours worked if other than normal as shown in the program,
(b) miscellaneous deductions of an intermittent nature,
(c) any employee information that requires a change in the master magnetic tape.

The operator at the console now tells the system to commence the payroll program and the equipment in a completely automatic manner refers to its stored program and processes the payroll.

The Time Factor

How long will it take? Again this depends entirely upon the individual problem but in all probability a payroll of this size will take approximately one hour and 15 minutes, with the answers recorded on magnetic tape as follows:

Tape 1–New up-dated master tape incorporating all changes.

Tape 2–Contains all information required to write the payroll cheque on a high speed printer.

Tape 3–Contains all information required to write the payroll register. If information required for each employee is voluminous enough a 2- or 3-line-per-employee register could be printed.

Tape 4–Contains bond deduction detail for listing and forwarding to the banks involved.

The number of tape outputs can be increased to fit the individual needs.

The printing of cheques, registers, bank lists, etc. is made from the magnetic tape. These tapes can be stored or reused depending upon the filing standard for such information.

New clock cards can be produced from the master magnetic tape by use of a tape to card converter. The cards can be interpreted by a punched card interpreter.

The system from an operational standpoint is not complex, but no business system is really complex if sufficient time is taken to break it down and analyze each segment. The complexities develop in converting the manual to the automatic, because every small segment of the operation must be clearly defined.

Today management is recognizing that this new tool may be the way to reduce costs and provide information when needed. Authority is being given in large organizations to study the feasibility of installing E.D.P. equipment. Smaller companies are showing considerable interest because it is logical to assume that E.D.P. equipment will be designed and produced to fill the needs of smaller organizations.

An Approach to a Feasibility Study

Here is a basic approach to the feasibility study that of course requires adjustment to fit the individual organization.

1. Select one or two people with considerable company background. They should have vision and enthusiasm, and above all they should not be "easily discouraged".
2. Allow them time to become acquainted with E.D.P. concept. They should attend courses sponsored by equipment manufacturers and by universities that have done research in this field.
3. They should then arrange to present the general idea at a high organizational level. This will give the top management an understanding of what such equipment is capable of doing.
4. Managers of operating divisions or departments should be requested to indicate their optimum requirements from such a system. For example, the manager of production planning might request a production control system that would determine exactly the material required from feeder plants giving consideration to manufacturing lead time, for given production rate. The service parts manager might request a system that will allow reduction of inventory size and, therefore, of investment cost and of obsolescence, by obtaining daily information such as:

   Stock in re order position.

   Orders not received as scheduled from vendors.

   Automatic float change based upon volume (excepting seasonal items to be reported separately).
5. Review of such requirements will indicate the sequence in which the studies should be made.
6. When the area to be studied has been selected, personnel from that area should be placed on special assignment to assist the original E.D.P. people. The new personnel should become familiar with E.D.P. generally. This can be accomplished by attending an equipment manufacturer course intended for this purpose.
7. A procedure analysis of the study area is made and a new procedure developed for E.D.P. use.
8. At this time it will be possible to determine within reasonable limits whether or not a breakeven point is possible with that area.

The study to this point will probably have caused considerable improvement in the present procedures. It will also have provided a well-defined picture of present procedures as well as information that will have considerable bearing on equipment required, and it may indicate that a punched card procedure will provide the required service.

In the event that the study indicates economic use of E.D.P. equipment, the usual approach is to give the manufacturer a letter of intent to purchase or rent. Writing of machine programs for the procedures involved is then commenced under the general guidance of the manufacturer of the equipment selected.

It should be remembered that the important factor here is the overall concept: "office equipment that will process data automatically, referring to its stored program for instructions".

Today E.D.P. equipment is new, awe-inspiring because of its speed, accuracy and capacity; tomorrow it will be commonplace.

Accounting for the Plywood Industry

U. E. HOUGHLAND AND C. G. CHAMBERS

IN INTRODUCTION it may be well to compare the accounting problems of this industry with those of the sawmill industry. In the sawmill industry the major portion of the cost of the finished product is the raw material content. Price differentials in the cost of logs do not serve as a basis for allocating log cost to the various grades of finished products because each grade of log will yield a varying proportion of all grades of finished product. Owing to the high proportion of the raw material cost an arbitrary division of this cost to the finished products has been generally regarded as unsatisfactory. In addition, the finished products are subjected to various degrees of fabrication varying from rough sawing to kiln drying and planing.

In the plywood industry the same problem in respect of raw material cost presents itself but to a lesser degree owing to the higher proportion of fabrication cost. However, with minor exceptions, the entire product receives the same degree of fabrication.

In order to determine the cost of each grade and panel size of the finished product it would be necessary to develop an acceptable method of allocating the cost of logs used to the various products. As in the case of lumber, no completely satisfactory method of allocating such costs has been established. For this reason the usual plywood production accounts are simple process cost accounts which develop overall unit costs based on volume. A unit of volume has been devised for this purpose which is one square foot of either 3/8″ or 1/16″ thickness; the former is the unit generally accepted, the latter being preferred by some manufacturing plants owing to its convenience in converting the standard veneer thicknesses to units. It is to be noted that about 1/16th is lost in sanding. As in dressed lumber, where the requisition is for 1″ and you receive 3/4″, so in plywood you receive 1/4″ on a requisition for 5/16ths. All production and sales records are kept in the gross thickness. Sixteenths are used merely because 16 is the lowest common multiple. For example 5/16ths is the commonest thickness.

As a matter of interest it may be stated that attempts have been made with fair success to cost with acceptable accuracy the various grades and thicknesses of a finished product. Theoretical "standard costs" for the different sized panels can be develop-

ed which may be tested by repeated comparisons, in total, with the actual process costs. Such standard costs will serve a useful purpose for comparison and control, always providing that the arbitrary nature of the allocation of raw material cost is recognized. However, the development of such theoretical costs is a highly technical study which is thought to be beyond the scope of this article, and so attention will be focused here on the process cost account to be charged with the costs of the various operations.

PHYSICAL OPERATIONS AND RELATED PROCESS COSTING ACCOUNTS

Green End

The logs are sorted in the mill pond and are there bucked (or "blocked") into suitable lengths, generally 100" for 8' panels, allowing 2" for trimmings. These "blocks" are hauled up to the mill deck and placed in a rotary barker – a machine which removes all bark from the logs in preparation for the lathe.

The blocks are then mounted on the lathe and are rotated against the knife which peels off a more or less continuous sheet of veneer of the required thickness until the diameter of the core is such that technical problems make further peeling impracticable. The block is then released from the lathe and is used for by-products such as pulp chips, ties or short length lumber.

From the lathe the veneer passes over rolls to the clipper. This is a knife press suspended transversely over the rolls, the operator of which endeavours to cut the greatest practical widths of clear veneer, cutting out strips containing large knots or splits.

Dryers

The pieces of green veneer after sorting and grading pass from the clippers to the drying ovens (heated by steam pipes) to remove moisture. Following this the narrower strips of veneer are taped or edge glued together to make the 4' widths desired for plywood manufacture. The veneer panels are then inspected and knots or other imperfections are removed and patches fitted. The veneer is then graded into face, back or core stock for assembly into plywood.

At this point the veneer is tallied and the quantities of veneer production are determined. A veneer "Recovery Factor" is computed; this factor is expressed in 1/16ths of veneer produced for each board foot of logs used.

ACCOUNTS

Log Cost
- Logs used
- Booming, blocking and barking expense

Veneer Manufacturing

Lathe–
- Labour
- Knife expense
- Sundry expense
- By-products Income account (Credit)

Clipper–
- Labour
- Knife expense
- Sundry expenses

Drying–
- Labour
- Steam
- Sundry expense

Taping and Jointing–
- Labour
- Supplies
- Machine rentals

Patching–
- Labour
- Supplies
- Sundry expense

Dry chain sorting–
- Labour

Gluing

ACCOUNTS

In the gluing operation the first variations occur in the process costs of standard, waterproof and other types of plywood, all prior operations being identical for all types. The cost of the glues used for the different types of plywood varies substantially. Consequently the quantities of each type and relative costs are developed separately for this operation.

Veneer panels of grades and thicknesses suitable for the thickness and number of ply of the plywood panels being manufactured are assembled at the standard or waterproof glue spreading machines. Here each veneer panel is set by hand. The centre panel or core (in the case of 3-ply) is passed through the glue spreader, both sides being coated with glue, and laid over the "back" with the grain of the panels at right angles to each other. The face is then laid over the core with its grain running parallel to the grain of the back. In the case of 5-ply or greater the alternate veneer panels, i.e.: second, fourth, etc., are glued. The glued-up plywood panels are then placed in large hydraulic presses and remain in these until the glue has set.

Gluing and Pressing–
a. Standard:
Labour
Glue materials used
Other supplies
–and–
b. Waterproof:
Labour
Glue materials used
Other supplies

Rough Production

Following gluing, the plywood panels are inspected and a certain amount of final patching and improvement is carried out. The panels are then trimmed to exact dimensions. At this stage the production quantities of standard and waterproof plywood have again been merged, a single cost being developed for both types.

Rough finishing–
Labour
Saws expense
Supplies

Sanding and Finishing

Up to this point the surfaces of the panels are just as they came off from the lathe knives. For certain grades the panels are now passed through the sanding machines which smooth and finish the panel surfaces and the panels then receive the final grading.

Sanding and Finishing
Labour
Supplies
(with memorandum unit costs developed by reference to the total of the sanded products)

Wrapping and Warehousing

In order to prevent damage to the finished panels in shipping, they are often wrapped in heavy paper – 10 to a bundle – and bound with steel strapping before storing in the warehouse.

Wrapping & Warehousing–
Labour
Wrapping supplies and strapping.

Overhead

It will be observed that no allocation is made of the various overhead accounts since owing to the type of costing no useful purpose is normally served by distributing the overhead to the various processes; on the contrary, more information is given to management in showing these costs in their full amount. Certain expenses dealt with in the attached operating statements as overhead accounts can be, and sometimes are, treated as direct costs; these are noted in the next paragraph.

* * *

The foregoing sets out in brief a simple method of dealing with plywood costs. A number of variations are outlined below, any of which would be quite acceptable:

1. Distribution of Overhead

a) *Maintenance* — because of the ready manner in which equipment is identified with the various processes it is easy to distribute maintenance, labour and supplies to the processes. A truer total cost of each process is thus developed.

b) *Services* — A large portion of the services such as steam and electric power can be allocated to processes through metered usage or arbitrary percentages.

c) *Social Costs* — Involuntary social costs such as U.I.C. and Workmen's Compensation and voluntary social costs such as employees' basic contributions can be "loaded" on to basic wages and distributed to costs accordingly.

2. Use of Cost Centres

All costs may be accumulated in cost centres, i.e. one or a group of machines, and transferred from there to the process costs on the basis of production. The advantage of this method is in the facility with which efficiencies of two units may be compared.

Operating Statements

The following example of typical operating statements for a plywood factory shows the manner in which the costs of the total production are assembled, and the development of the costs of two of the types of plywood are illustrated. In the example figures have been filled in at key points to facilitate understanding of the forms but these figures are purely hypothetical.

(*For examples of statements see pages 117 to 121.*)

Schedule 1

ABC PLYWOOD COMPANY LIMITED

STATEMENT OF PROFIT AND LOSS

For the year ended ——

	Sixteenths	Amount	Per M.
Gross profit (Schedule 2) —			
Standard plywood	39,000,000	$ 46,890.00	$ 1.202
Waterproof plywood	38,000,000	27,723.00	.731
Together	77,000,000	$ 74,613.00	$ .969
Deduct —			
Selling expense:			
Salesmen's salaries and commissions		$ —	$ —
Car and travelling expenses		—	—
Advertising		—	—
		$ —	$ —
		$ —	$ —
Deduct —			
Administrative and general expenses:			
Administrative salaries		$ —	
Administrative expenses		—	
Office salaries		—	
Stationery and office expenses		—	
Postage and excise		—	
Telephone and telegraph		—	
Donations		—	
General expenses		—	
Legal and audit fees		—	
Car and travelling expenses		—	
		$ —	
Profit before bond interest and taxes on income		$ —	
Deduct —			
Bond interest		—	
Profit before taxes on income		$ —	
Deduct —			
Provision for taxes on income		—	
Profit for the period		$ —	

Schedule 2

ABC PLYWOOD COMPANY LIMITED

STATEMENT OF COST OF SALES AND GROSS PROFIT

For the year ended ————

Standard and Waterproof Plywood

	Sixteenths	Amount	Per M.
STANDARD PLYWOOD			
Manufacturing costs —			
Veneer glued	40,000,000	$165,067.00	$ 4.126
Gluing		34,000.00	.850
Rough finishing		9,200.00	.230
Sanding and finishing		7,200.00	.180
Total direct manufacturing		$215,467.00	$ 5.386
Wrapping and warehousing		20,000.00	.500
Supervision and overhead		96,000.00	2.400
Total production cost		$331,467.00	$ 8.286
Add —			
Inventory at beginning	4,320,000	36,288.00	8.400
	44,320,000	$367,755.00	$ 8.298
Deduct —			
Inventory at end	5,320,000	44,145.00	8.298
Cost of plywood sold	39,000,000	$323,610.00	$ 8.298
Sales	39,000,000	370,500.00	9.500
Gross profit (carried to Schedule 1)		$ 46,890.00	$ 1.202
WATERPROOF PLYWOOD			
Manufacturing costs —			
Veneer glued	35,000,000	$144,433.00	$ 4.126
Gluing		84,000.00	2.400
Rough finishing		8,050.00	.230
Sanding and finishing		6,300.00	.180
Total direct manufacturing		$242,783.00	$ 6.936
Wrapping and warehousing		17,500.00	.500
Supervision and overhead		84,000.00	2.400
Total production cost		$344,283.00	$ 9.836
Add —			
Inventory at beginning	5,220,000	51,678.00	9.900
	40,220,000	$395,961.00	$ 9.845
Deduct — Inventory at end	2,220,000	21,856.00	9.845
Cost of plywood sold	38,000,000	$374,105.00	$ 9.845
Sales	38,000,000	401,828.00	10.574
Gross profit (carried to Schedule 1)		$ 27,723.00	$ .731

Schedule 3

ABC PLYWOOD COMPANY LIMITED
COST OF PLYWOOD PRODUCTION
For the year ended ——

	Sixteenths	Amount	Per M.
Cost of veneer to be glued (Schedule 4)	75,000,000	$309,500.00	$ 4.126
Glued production — standard:	40,000,000		
Gluing and pressing — Labour		—	—
Glue materials		—	—
Cost of gluing — standard		$ 34,000.00	$ .850
Glued production — waterproof:	35,000,000		
Gluing and pressing — Labour		$ —	$ —
Glue materials		—	—
Cost of gluing — waterproof		$ 84,000.00	$ 2.400
Composite cost of gluing	75,000,000	$118,000.00	$ 1.574
Rough finishing:			
Labour		$ —	$ —
Saws expense		—	—
Supplies		—	—
		$ 17,250.00	$ .230
Sanding and Finishing:			
Labour		$ —	$ —
Supplies		—	—
		$ 13,500.00	$ .180
Wrapping and Warehousing:			
Labour		$ —	$ —
Wrapping supplies and strapping		—	—
		$ 37,500.00	$ .500
Supervision and overhead (Schedule 5)		$180,000.00	$ 2.400
Total composite cost of plywood production	75,000,000	$675,750.00	$ 9.010

Schedule 4

ABC PLYWOOD COMPANY LIMITED

COST OF VENEER PRODUCTION

For the year ended ————

	F. B. M.	Amount	Per M.
Cost of logs used:			
Log inventory at beginning	—	$ —	$ —
Logs purchased	—	—	—
	—	$ —	$ —
Deduct —			
Log inventory at end	—	—	—
Cost of logs used	5,000,000	$225,000.00	$45.000
	Sixteenths		
Veneer production:			
Logs used — 1/16 basis	74,000,000	$225,000.00	$ 3.041
Recovery — 14.8 (i.e. 1/16's per board foot)			
Booming, blocking and barking expense		4,500.00	.060
		$229,500.00	$ 3.101
Veneer manufacturing expense:			
Lathe — Labour		$ —	$ —
— Knife expense		—	—
— Sundry expense		—	—
Clipper — Labour		—	—
— Knife expense		—	—
— Sundry expense		—	—
Drying — Labour		—	—
— Steam		—	—
— Sundry expense		—	—
Taping and jointing — Labour		—	—
— Supplies		—	—
— Machine rentals		—	—
Patching — Labour		—	—
— Supplies		—	—
— Sundry expense		—	—
Dry chain sorting labour		—	—
Total manufacturing expense		$ 82,900.00	$ 1.120
Income from sales of by-products		$ 7,400.00	$ .100
Total cost of veneer production		$305,000.00	$ 4.121
Add —			
Veneer inventory at beginning	2,000,000	8,626.00	4.313
	76,000,000	$313,626.00	$ 4.126
Deduct			
Veneer inventary at end	1,000,000	4,126.00	4.126
Cost of veneer to be glued (carried to Schedule 3)	75,000,000	$309,500.00	$ 4.126

Schedule 5

ABC PLYWOOD COMPANY LIMITED

STATEMENT OF FACTORY SUPERVISION AND OVERHEAD

For the year ended ————

	Production 75,000,000 — 1/16's	
Maintenance and repairs:		
Veneer operation — green end	$ —	$ —
Veneer operation — dry end	—	—
Gluing	—	—
Finishing	—	—
Sundry buildings and equipment	—	—
	$ —	$ —
	$ —	$ —
Powerhouse:		
Labour	$ —	$ —
Fuel	—	—
Water	—	—
Maintenance and repairs — powerhouse and dam	—	—
Outside purchases — light and power	—	—
	$ —	$ —
Factory supervision and overhead:		
Supervision salaries	$ —	$ —
Indirect labour	—	—
Miscellaneous mill expense	—	—
Social services and personnel expense	—	—
Workmen's compensation insurance	—	—
Fire insurance	—	—
Site taxes	—	—
	$ —	$ —
Depreciation	$ —	$ —
Total factory supervision and overhead (carried to Schedule 3)	$180,000.00	$ 2.40

BY GERTRUDE MULCAHY B.A., C.A

Accounting Research

The C.I.C.A.
Research Department

Effective Financial Reporting

Every financial report should aim to tell its story fully and well. In recent years, the management of a substantial number of Canadian companies has made remarkable progress towards achieving this objective. One of the judges of the 1954 *Financial Post* annual awards commented "There are now many more reports of a high standard. It's hard to pick a winner."[1]

This aspect of management's responsibilities has received considerable attention in the last few years. This is as it should be. The annual report is the basic method by which management reports to the owners, the shareholders. It has also come to be recognized as an effective medium of encouraging public interest. The annual report leaves an impression with everyone who looks at it. It can make good friends but it can also create ill will.

The annual report contests have made a considerable contribution towards raising the general standards of financial reporting. Since 1940, *The Financial World*, an American investment and business weekly magazine, has made annual surveys of stockholders reports and has presented "Oscars" for the best in various classifications. For the past four years, *The Financial Post* has made awards to Canadian companies whose annual reports were judged the best in their respective field. *The Accountant*, the weekly publication of the Institute of Chartered Accountants in England and Wales, instituted a similar competition in 1954. On the occasion of the presentation of *The Accountant* annual awards for 1955, Mr. R. Staples, the editor-in-chief of *The Accountant*, stated: "We have evidence that *The Accountant* annual awards are turning the thoughts of many boards of directors to the important duty of providing reports and accounts which tell the full story of the activities of their concerns and which are understandable not only by accountants and stockbrokers, but by the man in the street who provides the money which is the life-blood of the business."

In commenting on *The Financial Post* annual awards for 1954, Mr. Paul Deacon stated: "There are still firms that pay only lip service to the idea of keeping their shareholders informed." The receipt of the annual report in some cases is "little more than yearly recognition that you're still on the mailing list".[2] The apparent indifference or misjudgment of the management of such companies is made more strikingly obvious by the conscientious efforts of others to present a good report.

What makes a good financial report? There are obviously a great many things which contribute to its effectiveness. But, "in the last analysis, it is the financial and statistical information presented and the way

[1] *The Financial Post*, November 13, 1954. [2] ibid.

in which it is presented that measure the usefulness of an annual report. . . . . When one reviews the reports that won prizes last year, certain common characteristics become apparent at once. For example, it is obvious that great care has been taken to make the reports attractive so that people who receive them will want to look at them. More important, however, is the amount of useful information that can be found in them."[3] In view of the wide variety of circumstances, there can be no clear cut definition of what constitutes adequate information and effective presentation. On the other hand, the management of the prize-winning companies has obviously been guided by certain basic principles of fair reporting. In an endeavour to bring to light some of the details of these basic principles, I have selected the annual report for 1954 of 10 Canadian companies which in the past have been recognized as some of the leaders in this field. The list consists of MacMillan & Bloedel Limited, The Southam Company Limited, Dominion Stores Limited, Atlas Steel Limited, Ford Motor Company of Canada Limited, Abitibi Power & Paper Company Limited, British Columbia Power Corporation Limited, The Shawinigan Water and Power Company, Nova Scotia Light and Power Company Limited and Imperial Oil Limited.

Financial Statements

In all of the above mentioned reports, the financial statements were prepared on a comparative basis, setting out the corresponding figures for the 1953 fiscal year. In addition, cents were eliminated and the figures rounded out to the nearest dollar.

BALANCE SHEET

The balance sheets were all drawn in account form, and the details of presentation were excellent. Items of a similar nature were grouped under properly descriptive captions with totals and sub-totals extended. The use of capitals, bold face type and underscoring in the captions of the various categories all added to the clarity and attractiveness of presentation. One interesting feature, not common to all of these balance sheets, was the clear differentiation between "Liabilities" and "Shareholders' Equity". This was accomplished by segregating the items on the right side of the balance sheet under two major headings, "Liabilities" and "Shareholders' Equity" or "Shareholders' Investment".

The bases of valuation of assets such as marketable securities, inventories, investments, investments in non-consolidated subsidiary companies and fixed assets were clearly set out either on the face of the balance sheet or in notes appended thereto. The pertinent details of the capital stock and long term indebtedness have been presented in a similar fashion. The term "Earned Surplus" was replaced in 6 of the 10 balance sheets by more descriptive phrases, such as "Earnings retained for use in the business", "Earnings employed in the business" and "Reinvested earnings". The date set out in the description of the earned surplus on the balance sheet of Abitibi Power and Paper Company Limited refers to the date of reorganization at which time the accumulated deficit was eliminated.

The terminology suggested by the

[3] *The Journal of Accountancy*, April, 1954, p. 418.

Committee on Accounting and Auditing Resarch of the C.I.C.A. to replace inappropriate use of the term "Reserve" was adopted in all but 3 of the balance sheets. On the other hand, the suggestion that reserves should be shown as constituting part of the shareholders' equity was followed in only one of the 6 statements in which true reserves were disclosed.

Statement of Profit and Loss

The single step form of income statement has gained considerable prominence in financial reporting in the last few years. MacMillan & Bloedel Limited and Imperial Oil Limited used a variation of this form to present their operating results for 1954. In both cases, items of income were grouped over a single total and items of expenses, other than income taxes, over a second total to arrive at a figure described as "Earnings before deducting taxes on income" and "Earnings before income taxes" respectively. The charge for income taxes was deducted from this figure.

The statements of profit and loss in the reports of the other companies were prepared on the ordinary multiple step basis, that is the conventional grouping of items with intermediate balances.

With one exception (Nova Scotia Light & Power Company Limited) the revenue from sales was set out in the statement of profit and loss. In the above mentioned exception, this item was grouped with miscellaneous income and described as "Revenues from Electric and Transit Services and Miscellaneous Income". The segregation of the revenues derived from various sources, in the majority of these statements, contributed considerably to the clarity with which the current operating results were presented. In this respect, it would be extremely difficult to improve upon the presentation used by The Shawinigan Water & Power Company (see below).

The details of the disclosure of the items of expense varied, but in all instances the amounts of the current charges for depreciation, income taxes, and interest on funded debt (where applicable) were set out. The requirements by the Companies Act (Canada) relating to directors' fees, executive salaries and legal fees were fulfilled in the majority of cases by notes to the statements (6 of the 8 companies concerned). This is probably the most satisfactory method of disclosure, because in most instances these items are relatively insignificant in relation to the total operating expenses.

In 7 of the 10 statements of profit and loss, the current charge for income taxes was segregated from the

THE SHAWINIGAN WATER & POWER COMPANY

Excerpt from the Statement of Profit and Loss Account showing Segregation of Revenues

	1954	*1953*
Revenue from Power Sales	$42,042,323	$38,800,816
Revenue from Temporary Investments and from Other Sources, including Rentals and Transmission Charges	1,298,095	1,256,199
Dividends from Subsidiary and Other Companies	1,826,580	1,745,388
Total Revenue	$45,166,998	$41,802,403

other expense items. The revenues and expenses (excluding income taxes) were brought down to a figure described as "Earnings before provision for taxes on income", "Earnings before deducting taxes on income", "Profit before income taxes", etc. The current charge for income taxes was then deducted from this figure to arrive at the net results of current operations. This method of presentation emphasizes the significance of the profit before income taxes in a proper assessment of operating trends.

In all cases, the net result of the current operations was positively identified. This was accomplished by the use of descriptive phrases such as: "Net income for the year", "Net Profit", "Net income transferred to consolidated surplus account" and "Net earnings for the year".

Recently, there has been some discussion of the "all inclusive" and the "current operating performance" types of income statement. In this respect Bulletin No. 43, issued by the Committee on Accounting Procedure of the American Institute of Accountants, stated: "It is the opinion of the committee that there should be a general presumption that all items of profit and loss recognized during the period are to be used in determining the figure reported as net income. The only possible exception to this presumption relates to items which in the aggregate are material in relation to the company's net income and are clearly not identifiable with or do not result from the usual or typical business operations of the period."

In all of the statements reviewed extraordinary items which were materially significant in relation to the company's reported net income were excluded in the determination of the net operating results. However, there could be some question as to the materiality of some of the items so excluded in the statement of The Shawinigan Water & Power Company.

There are two methods of presentation of the extraordinary items excluded from the determination of net income. One is to carry all such charges and credits as special items in the statement of earned surplus. The other is to show them as special items on the statement of profit and loss but "below the line", that is after the figures designated as net income for the year.

None of the 10 financial reports selected used the second method of presentation. All extraordinary items of material significance were set out as adjustments of the earned surplus account.

Statement of Earned Surplus

The details of the changes in the earned surplus account were set out in all of the reports. In only two instances this was done by means of a combined statement of profit and loss and earned surplus. The Dominion Stores Limited report was the only one in which the current changes were set out in the face of the balance sheet.

With the exception of some of the items included in the surplus statements of The Shawinigan Water & Power Company, the current changes in earned surplus could be classified in two categories: (a) those items representing allocations or appropriations of surplus, and (b) items of extraordinary gains or losses which by reason of their nature and size might distort the view of earnings. In the first category, there were such items

as dividends, amounts transferred to and from reserves, premiums and expenses relating to changes in the share capital of the company, and commissions on sale of bonds. Items which were classified as adjustments to earned surplus by reason of their nature and significance in relation to the reported net income included profit or loss on disposal of fixed assets or investments, accumulated depreciation transferred on disposal of fixed assets, reversals of capital cost allowance above depreciation provided in prior years in determining current earnings, and adjustments in prior years' income tax provisions in excess of estimated requirements.

Of the 5 companies which had more than one class of share capital, all but the Ford Motor Company of Canada Limited segregated the dividends on the various classes.

Notes to Financial Statements

It is recognized that financial statements should not be condensed in favour of notes, in connection with information which should be disclosed on the face of the balance sheet. However, on many occasions, information required for the proper understanding of items included in the financial statements can be most suitably disclosed in notes appended thereto. In the interests of clarity and attractiveness of presentation this medium of disclosure has become extremely useful and effective. In this respect, the management of MacMillan & Bloedel Limited, Imperial Oil Limited, Nova Scotia Light & Power Company Limited and British Columbia Power Corporation Limited were outstandingly successful. Such notes included information relating to basis of consolidation, parent company's equity in non-consolidated subsidiaries, long term indebtedness, capital stock, contingencies and commitments, depreciation, and capital cost allowances, basis of annual charge for income taxes, temporary investments and property accounts. (Next month consideration will be given to the "additional information" provided in the selected annual reports. This will cover statistical information, charts, additional statements, financial reviews, etc.)

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BY KENNETH M. PLACE, C.A.

Administrative Accounting

The Internal Auditor Policeman or Counsellor?

In the past, the internal auditor has been generally regarded as a form of policeman; his function has been to implement the work performed by the company's professional auditor from a security viewpoint.

Traditionally, one of the major aspects of the internal audit has been the verification of cash and other assets. Because of this, the internal auditor has traditionally been regarded as a peculiar type of "bogey-man". He was met with reserve if not open resentment by plant personnel. His main purpose in life appeared to be to comment in detail on every clerical error and to criticize every deviation from prescribed procedures. It did not seem to matter if the deviation resulted in an improvement in the procedure, or if local conditions warranted a slightly different treatment. It should be emphasized, though, that this attitude was not completely the fault of the internal auditor. It was more properly attributable to the policy of most companies in stressing this aspect of the internal audit to the exclusion of other more constructive concepts of audit work. In recent years, however, there has been a marked change in the emphasis placed upon the "internal audit".

Purpose of Internal Audit

While the verification of assets is still an important phase of any audit, ever-increasing importance is now being given to other phases of accounting. With decentralization of accounting existing to a greater or lesser degree in almost every multiple-unit commercial enterprise, consistency in the application of accounting principles is more and more important. Uniformity in the methods of valuing inventories, costing production and absorbing indirect expenses are absolutely essential if financial results of operations are to be reported properly and accurately. One of the major results of this decentralization of accounting is a considerable degree of delegation of authority. This delegation of authority does not relieve the senior accounting officer of his responsibility for the overall accuracy of the company's financial records. Rather it complicates his problems and necessitates more planning and coordinating on his part to ensure that proper procedures are followed. Perhaps the most useful method of accomplishing this is effective use of the internal audit, particularly with respect to costing production.

A Cost Audit

There are numerous ways of approaching a plant cost audit and many different aspects which can be emphasized. The amount of work required on each section of the accounting records differs. No two audits are identical in the problems they present or the amount of work re-

quired to perform a good audit. These details must necessarily be left to the judgment of the internal auditor. There are, however, certain areas which require review, and considerable assistance can be given to the auditor through the use of a well-designed audit program. Such a program will usually be divided into three sections: (A) prior to trip to plant, (B) at plant, (C) after plant visit. A brief outline of the three sections could be drawn up as follows:

A. Prior to Plant Visit

1. Check through previous audit correspondence files noting all pertinent items.
2. Review previous audit work papers, setting up new forms where practicable, and obtain details of charges made to the plant by head office, such as depreciation and other indirect expenses.
3. Review previous audit reports, items discussed, items requiring follow-up, outside auditors' memos and current internal bulletins on accounting policies or procedures.
4. Review previous audit work papers to get general idea of manufacturing processes, flow of costs, etc.

B. At Plant

1. In order to assess the propriety of the cost allocations, a knowledge of plant processes is necessary, since costs accumulate as the goods move through the plant. Sufficient time should be spent in reviewing descriptions of processes and actual physical layout of the plant to become thoroughly familiar with the various cost centres, the areas where common facilities are used for more than one product, where inventory and production count points are in the process, etc. Charts or write-ups concerning the process should be obtained where available.
2. Once this primary familiarization has been accomplished, the critical examination of the method of accumulating and distributing costs to cost centres and thence to intermediate and end-products should be made and appropriate working papers prepared. Use of actual plant forms with illustrative figures will frequently simplify description of the plant cost system.
3. Generally, the starting point in the audit work papers will be the finished product transfer voucher for the month being examined. This is the end accounting result of the plant cost system and will give the auditor a picture of the number and variety of products manufactured. Such a voucher will usually show quantities produced and cost thereof. Usually details of these figures can be illustrated for each product, or group of products, by a summary of manufacturing costs. This summary may be net of in-process inventory changes, or it may be gross to which must be added or deducted the change in value of in-process inventory. The examination would then proceed as follows:

   (a) Review the method of determining quantity and valuation of in-process product.

   (b) Review the method of determining quantities produced.

   (c) For each of the major cost elements, such as essential

materials, labour and salaries, etc., follow the flow of cost from the point at which incurred to distribution to the end-product.

(d) Determine plant policy and practices in deciding repairs (chargeable to cost), replacements (capitalized with corresponding write-off) or new capital additions to the plant. A review of repair orders to insure proper classification from the accounting viewpoint is important.

(e) Review plant procedures with regard to recoveries, waste, by-products, catalysts, etc.

(f) Review a copy of plant cost sheets, charts of accounts, and other pertinent accounting instructions.

(g) Where standards are the basis for cost distribution, find out how current they are, and where any significant changes in process, equipment, etc. have occurred since standards were established.

(h) To the extent possible, observe the mechanics and techniques by which the plant does its accounting and where appropriate suggest ideas for improvement.

(i) Upon completion of the examination, discuss results with the appropriate personnel.

C. After Plant Visit

1. Follow-up items which could not be settled at the plant and review in general the results of the audit with the individuals responsible for immediate supervision of the plant accounting operation.
2. Prepare audit report, file work papers and revise general audit information with respect to the particular plant concerned.
3. Where the audit report contains items requiring action, the necessary follow-up should be carried out to ensure that the proper action is taken.

Integration with Methods Studies

With the increasing size of companies and the greater complexity of business machines and clerical procedures, more and more attention is being given to the field of systems and procedures.

One of the most serious problems facing industry today is that of communications. Many people tend to think of "communications" in industry as being the transmission of the spoken or written word in an understandable manner. Surely this is only a small part of the problem. With the trend to decentralization and the growth and diversification evident in most companies, rapid transmission of information of all types is highly important. In the accounting field, the problems involved in communications are particularly important. Speed and accuracy of reporting are essential to any good program of financial control.

The accounting operations which occur from the time a sale is made, materials are purchased and wages and salaries are paid are summarized in a useable form in the financial statement for the operation concerned. Literally thousands of individual transactions are involved. The methods used to accomplish this objective must therefore be the best available in order to permit management to obtain the most current and reliable information possible. Thus it is

a major responsibility of the accounting organization to ensure that the systems and procedures used to perform the various clerical operations necessary to the preparation of adequate financial reports are the best available. The only way in which this can be done is to review constantly the various methods used. Furthermore in order to obtain proper value from this continuing review, it must be performed by personnel who are thoroughly familiar with the company's operations and the developments in office machines and who have the ability to combine these two factors to the best advantage.

With the increasing complexity of office machines and the introduction of electronics into the design of accounting machines, the proper adaptation of such equipment to individual requirements is becoming more and more the job of the specialist. In fact, most professional accounting firms have set up "Methods Sections" and practically all management consultants have inaugurated a similar service. In the larger companies, there is a continual need for review of this part of the company's operations, and the use of an outside consultant could develop into the full-time employment of such a consultant. What is the answer? It appears to me that proper use of the internal auditor and his staff combined with the machine-specialist goes a long way toward solving the problem. The internal auditor, in the course of his regular duties, is continually reviewing the procedures currently in use. He knows how they must operate to function effectively as part of a unit. He has the advantage of seeing them in operation throughout the company. He knows which procedures are creating "bottlenecks".

If his specific knowledge of the company's operations can be linked with proper understanding of the capabilities of the numerous types of machines available, worthwhile improvements in the mechanical field of accounting work can be expected.

Furthermore during the course of his audits he can greatly assist those in charge of the specific accounting operation in eliminating bottlenecks, in advising them of procedures used by other units and in acquainting them with the requirements of other parts of the organization.

There is one further service which he can perform and which is certainly not the least valuable in the efficient operation of the organization's accounting system. He can do much to encourage and stimulate the development of new techniques at the various units. Many times this phase of unit operations suffers because of lack of sympathy and understanding on the part of "head-office" personnel towards suggestions and ideas originating at outside units. Encouragement through explanation of overall company policies, a constructive approach to the unit problem, actual assistance in working out details of proposed changes and in selling them, where necessary, can often result in worthwhile improvements in existing methods of accounting. After all, who should be more aware of the difficulties encountered in the various operations than the personnel directly responsible for the operation?

In the final analysis, then, one of the internal auditor's most useful functions is certainly that of coordinator and adviser on systems and procedures to all accounting units in the organization and not just that of a "policeman" engaged in counting cash and inventories.

BY J. E. SMYTH, C.A.

Students Department

Associate Professor, Queen's University

Accounting Data in Replacement Decisions

In last month's Students Department we mentioned three points which we think should be considered when reaching a decision whether to replace an existing long term asset. These are, briefly:

1. Will the future outlays required be less if the new equipment is purchased than if the existing asset is retained?
2. If there will be a saving in future outlays from replacement, will it be as great as what could be earned by investing elsewhere the funds required for a replacement?
3. Is there a possibility that further important changes in design may be made within the next few years?

We offer below a problem and a suggested solution which we have prepared to illustrate these points. The solution is our own and we hope that readers will examine it critically and write to us if they disagree.

Problem

The Superior Manufacturing Company is using a machine which it purchased seven years ago at a cost of $62,500 and against which depreciation af $43,750 has been recorded. At the present time the machine is estimated to have a future useful life of three years with no scrap value. Annual cash operating costs associated with its use are $15,000.

A salesman for the Modern Machinery Company Ltd. is endeavouring to persuade the management to replace this machine with a new one which will reduce annual cash operating costs from $15,000 to $9,000. The new machine would cost $60,000 and the salesman has offered a trade-in allowance of $10,000 on the machine presently in use. After taking account of the possibility of further improvements in design, the useful life of the new machine is estimated conservatively to be ten years, with no scrap value at the end of that time.

The management of the Superior Manufacturing Company considers that, in view of the alternative uses available for company funds, any outlay should yield an annual return of at least 8%.

Should the present equipment be replaced?

Suggested Solution

A comparison of the future cash outlays on a yearly basis is as follows:

	I. The present machine is retained	II. The present machine is replaced
Annual cash operating costs	$15,000	$ 9,000
Additional outlay involved in replacement, amortized over ten years: $\frac{60,000 - 10,000}{10}$ =		5,000
	$15,000	$14,000
Saving per year from replacement		$ 1,000

If a replacement were made now, these savings would be available only for the three remaining years of life of the present machine, when a replacement would be required in any case.

A decision to purchase the machine will involve a present cash outlay of $50,000, but future cash outlays will be reduced by $6,000 a year. For the three remaining years of life of the old machine, the average cash tied up each year is as follows:

First year	$\frac{(\$50,000 + \$44,000)}{2}$ =	$47,000
Second year	$\frac{(\$44,000 + \$38,000)}{2}$ =	41,000
Third year	$\frac{(\$38,000 + \$32,000)}{2}$ =	35,000
Average cash tied up over three years		$41,000

If a return of 8% per annum is required as a condition of expenditure, the savings per year from the replacement should be 8% of $41,000 = $ 3,280

It follows that the new machine should not be purchased apart, at any rate, from non-accounting considerations such as any advertising value the modern equipment might have, the effect upon employees of its introduction, and management's estimate of what effect future changes in the value of money may have upon the cost of replacement in three years time.

PUZZLE

The manager of a small country firm had been notified that an auditor was arriving on the local train, and was asked to meet him at the station at 10 o'clock. The auditor, however, arrived there an hour early and, not finding the manager there to meet him, proceeded to walk towards the firm's establishment at the rate of 6 miles per hour. The manager, not knowing that the auditor had already arrived, set out in his car to drive

him back and met him walking along the road. He stopped, let the auditor in, and returned to his office, arriving there 20 minutes before he was expected. How fast was the manager travelling in his car? (All factors in this problem are constant.)

(*Submitted by Mr. D. G. Turnbull, Montreal.*)

SOLUTION TO LAST MONTH'S PUZZLE

Let number of lots $= x$

Total revenue from sale of lots $= 180x$

Profit $= 180x - 2.430 = 6.\dfrac{2,430}{x}$

Therefore,

$$180x^2 - 2,430x = 14,580$$

$$180x^2 - 2,430x - 14,580 = 0$$

Dividing by 90:

$$2x^2 - 27x - 162 = 0$$

$$(2x + 9)(x - 18) = 0$$

Therefore, $x = 18$.

There were 18 lots in the tract.

CORRESPONDENCE

Ste. Dorothée, P.Q.

Sir: I was amazed to see what was considered as a solution to the problem submitted as a puzzle in the May issue of our magazine. It is, in fact, no solution at all, but just an informed guess. In effect, no logical way of finding the answer (or rather answers) is indicated. On the other hand, in order to limit the number of answers to one, the question should be reworded as follows: "What is the smallest number of apples that each hobo could have eaten?"

J. DEMONTIGNY, C.A.

Editor's Note: Mr. deMontigny has enclosed in his letter a complete mathematical solution which, unfortunately, space does not permit us to reproduce here. It would appear, however, that he is correct in his contention that the puzzle was not worded precisely.

Toronto, Ont.

Sir: I should like to comment further upon the proposals for the adjustment of accounts to a current dollar basis made by Mr. R. V. Fast in his letter in the May issue.

In measuring profits of the current year, depreciation is expressed as a percentage of a cost incurred in previous years. This certainly seems to contradict logical accounting procedure and has been a necessary evil and will remain so for a good many years. The remedy seems to be conversion of asset cost into current dollar value. The problem is to find a suitable price index for conversion. It is on this latter point that I disagree with Mr. Fast's solution. He favours a system by which each "industry, or better each company" comes up with its own price index for conversion on the premise or hope that "the net effect

would be similar since labour costs fluctuate fairly evenly throughout industry", and "the method of calculating this rate need not be uniform though it must be consistent within the business."

There will be trouble enough if assets are ever converted by companies as this concept gives way to many anomalies by which depreciation and profits could be manipulated, but there will be a regular field day if each company can play around with its own separate price index as long as it promises to be as honest as possible about its conversion.

One of the problems involved is that conversion is a "bugaboo" or rather a device which is not fully understood or appreciated by management and the public. Every one, pretty well, has been quite satisfied with the old system and there will be many who neither care nor will take the trouble to make the conversion.

Conversion, then, to be effective and desirable must be put into use on a grand scale with a price index common to all industries. If we are going to cater to individual firms, each company interested enough has the choice of "appraising" its assets on the traditional basis or the one suggested by Mr. Fast. Only if a general price index is used will conversion be generally accepted and, perhaps, in some practical way by the taxation authorities. Either the wholesale price index or a price index reflecting price changes in the particular type of fixed asset can be used. But, at the risk of being arbitrary, there should be one price index only so that no manipulation is possible and so that all firms may have easy access to a figure which is prepared independently by statisticians at Ottawa.

IRVING LOUIS ROSEN
(*Student-in-accounts*)

PROBLEMS AND SOLUTIONS

Solutions presented in this section are prepared by qualified accountants and reflect the personal views of the various contributors. They are designed not as models for submission to the examiner, but rather to provide such discussion and explanation of the problems as will make their study beneficial. The editor will welcome discussion of the solutions published.

PROBLEM 1

Intermediate Examination, October 1954

Accounting I, Question 6 (20 marks)

X Ltd. is a licensed wholesale concern which classifies the many products it sells into two departments. The products of Department A are subject to 10% sales tax based on the company's selling price; however, invoices are billed "tax included" and the company makes a single entry at the end of the month in respect of the sales tax on the month's sales. The products of Department B are not subject to sales tax.

The rate of gross profit to selling price, not including sales tax, is constant for the products of each department; 30% for Department A and 25% for Department B. Cost of goods sold entries are recorded monthly by journal entry.

The fiscal year end of the company is 31st December.

A physical inventory of all stock is taken only once per year, as at 30th November, and the book inventory is adjusted to agree with the physical inventory as at that date.

The trial balance of the general ledger as at 30th November 1953, prior to inventory adjustment entries, was as follows:

	Dr.	Cr.
Cash	$ 35,000	
Accounts receivable	130,000	
Accounts receivable — sales on approval	4,140	
Inventory — Department A	33,400	
— Department B	41,650	
Building	150,000	
Equipment	25,000	
Accounts payable		$ 82,000
Sales tax payable		6,850
Accumulated depreciation — building		18,000
— equipment		6,000
Capital stock		200,000
Surplus		55,000
Sales — Department A		422,840
— Department B		383,100
Sales on approval — Department B		4,140
Sales returns — Department A	8,470	
— Department B	11,100	
Cost of goods sold — Department A	263,690	
— Department B	279,000	
Sales tax	37,670	
Selling expenses	96,810	
Administrative expenses	62,000	
	$1,177,930	$1,177,930

From the books of original entry you obtained the following information in respect of the month of December 1953:

Purchases — Department A	$23,000
— Department B	25,000
Selling expenses	11,000
Administrative expenses	7,000
Sales on account — Department A	39,600
— Department B	35,000
Sales on approval — Department B	1,000
Sales returns — Department A	1,100
— Department B	1,200
— Sales on approval Department B	4,600

During the course of your examination you ascertained the following:

(i) The physical inventory of all stock on hand in the company's warehouse as at 30th November 1953 was as follows:

Department A	$32,000
Department B	38,000

(ii) Errors in the inventory cut-off:

	Gross invoice value Dept. A	Dept. B
Goods shipped in November not invoiced until December	$1,551	$ 872
Goods returned in November not credited until December	264	368
Goods invoiced in November not shipped until December	1,232	1,084

(iii) No entries are made in the book inventory or cost of goods sold accounts in respect of shipments billed as sales on approval.

(iv) The figure for November 1953 Sales – Department B included one shipment of Department B products which was on approval only. The shipment had been recorded at regular selling price and amounted to $1,460. These items were returned in January 1954.

(v) Depreciation is to be provided for the year on the diminishing balance method at the following rates:

Building	5% per annum
Equipment	20% per annum

Required:

(10 marks) (a) Statement showing your computation of the total adjusted book inventory and the total adjusted actual inventory as at 30th November 1953.

(10 marks) (b) Statement showing your computation of the book inventory as at 31st December 1953.

A SOLUTION

X LTD.

Statement of Adjustment of Inventory

30 Nov 1953

BOOK INVENTORY

	Dept. A	*Dept. B*	*Total*
Book inventory per general ledger, 30 Nov 1953	$33,400	$41,650	$75,050
Add:			
Cost of goods sold on approval, included in sales		1,095	1,095
Cost of goods returned in November, not credited until December	168	276	444
Cost of goods invoiced in November, not shipped until December	784	813	1,597
	34,352	43,834	78,186
Deduct:			
Cost of goods shipped in November, not invoiced until December	987	654	1,641
Adjusted book inventory at 30 Nov 1953	$33,365	$43,180	$76,545

PHYSICAL INVENTORY

Physical inventory of goods on hand in the company's warehouse at 30 Nov 1953	$32,000	$38,000	$70,000
Add cost of goods on approval			
Included in sales, in error		1,095	
Recorded separately from sales		3,105	4,200
Adjusted actual inventory at 30 Nov 1953	$32,000	$42,200	$74,200

X LTD.

Determination of Book Inventory

as at 31 Dec 1953

	Dept. A	*Dept. B*	*Total*
Adjusted book inventory as at 30 Nov 1953	$33,365	$43,180	$76,545
Adjustment to reduce book inventory to actual physical inventory	(1,365)	(980)	(2,345)
	32,000	42,200	74,200
Add purchases during December	23,000	25,000	48,000
	55,000	67,200	122,200
Deduct cost of goods sold during December (per schedule below)	24,465	25,785	50,250
Book inventory at as 31 Dec 1953	$30,535	$41,415	$71,950
Calculation of cost of goods sold for December			
Invoice price of goods billed during December	$39,600	$35,000	$74,600
Credits to customers for goods returned	1,100	1,200	2,300
Less November returns included in above credits	264	368	632
Credits for goods returned in December	836	832	1,668
Invoice price of goods billed and not returned	38,764	34,168	72,932
Less November shipments included in above billings	1,551	872	2,423
	37,213	33,296	70,509
Add December shipments billed in November	1,232	1,084	2,316
December sales at invoice price	38,445	34,380	72,825
Cost of goods sold:			
Dept. A: $\frac{70}{100} \times \frac{100}{110} \times 38{,}445 =$	$24,465		$24,465
Dept. B: $\frac{75}{100} \times 34{,}380 =$		$25,785	25,785
			$50,250

Editor's note: The problem did not require presentation of detail by departments, as above.

Examiner's Comments

In practice it is possible that the cut-off adjustments concerning December entries would be made to the physical inventories rather than to the book inventories. Many candidates answered the question with this in mind.

The most common mistakes were:

1. Calculating sales tax as 1/10 instead of 1/11 of selling price.
2. Calculating cost of sales as 100/130 and 100/125 instead of 70/100 and 75/100 respectively.
3. Recording cut-off adjustments at selling price instead of at cost.
4. Failing to show the total inventory figures, although this was required in part (a) and implied in part (b).

PROBLEM 2

Final Examination, October 1954

Accounting II, Question 1 (20 marks)

A is a married man, 67 years old, with four children aged 12, 14, 16 and 22. The third child became 16 on 17th September 1953. The oldest child is in the second year of his university course. The children have no income for 1953.

A's mother resides with him, and A estimates he contributed $500 towards her support during 1953. She has an income of $800 per annum from government bonds and old age pension.

A is employed at a yearly salary of $12,000. His employer withheld $1,840 in respect of taxes and $600 as contributions to the pension plan during 1953.

A's income from investments during 1953 was as follows:

Interest on Government of Canada Bonds	$ 320
Dividends on chartered bank shares	1,600
Dividends on Canadian Producing Oils Ltd. shares	1,400
Dividend cheques received from U.S. companies	850
Mortgage interest	1,200

A is also a partner in the A, B & Co. After paying salaries to the partners, A, B and C, of $2,000, $8,000 and $8,000 respectively each year the net profit of the partnership for the year ended 28th February 1953 was $3,000 and for the year ended 28th February 1954 was $5,000.

During the year he paid his bank $120 interest on money borrowed to finance purchases of second mortgages and $12 rental on a safety deposit box.

During 1953 he sold for $3,900 a second mortgage that he had acquired in 1952 for $4,000 (principal owing at date of acquisition $5,000, at date of sale $4,500).

During 1953, as a result of an automobile accident, A paid medical, nursing and hospital expenses amounting to $1,200 for himself, $1,800 for his wife and $1,600 for his mother. He recovered these expenses and was awarded $5,000 in addition under the judgment rendered in the lawsuit he brought against the driver of the automobile that ran into his. Medical expenses for his children amounted to $180 for the year.

On 1st January 1953 A gave 2 Government of Canada $1,000 3% bonds to his wife. Her income for the year from these and other bonds inherited from her mother amounted to $425.

On 31st March, 30th June, 30th September and 31st December 1953 A made instalment payments totalling $500 on his 1953 taxes.

Required:

Statement showing your computation of the balance of taxes on income owing by A for 1953.

A SOLUTION

"A"

Statement of Balance Owing on Income Tax for 1953

Statutory Exemption			
Age (67)		$ 500	
Children:			
Receiving family allowance: 2 x $150		300	
Not receiving family allowance: 1 x $400		400	
Attending university: 1 x $400		400	
Paid for support of mother — up to $400		400	
Wife:			
Income of wife	$ 425		
Less interest on Government of Canada bonds taxed in hands of A: 3% of $2,000	60		
	365		
Less	250		
Exemption for wife: $2,000 minus	115	1,885	
Total exemption			$3,885
Earned Income			
Salary		12,000	
Less pension fund contribution		600	
		11,400	
Share of profits of A, B & Co.		1,000	
Salary from A, B & Co.		2,000	
Total earned income			$14,400
Investment Income			
Canadian dividends —			
Chartered bank shares		1,600	
Canadian Producing Oils Ltd. shares	$ 1,400		
Less depletion allowance of 20%	280		
		1,120	
		2,720	
Foreign dividends (tax withheld, $150)		1,000	
Interest —			
Government of Canada bonds (including $60 received by wife)	380		
Mortgage	1,200		
	1,580		
Less interest paid on money borrowed to finance purchases of second morgages	120		
		1,460	
		5,180	
Less safety deposit box rental		12	
Total investment income			5,168
Net Income			$19,568

Taxable Income			
Net income			$19,568
Less statutory exemption			3,885
			15,683
Less medical expenses (maximum)			4,000
Taxable income			$11,683
Income Tax Payable **(1953 rates)**			
On first $10,000		$ 2,490	
On next 1,683 at 37.5%		631	
11,683		3,121	
Investment income surtax at 4% —			
Investment income	$ 5,168		
Less exemptions	7,885		
	nil	—	
		3,121	
Less dividend credit. 20% of $2,720		544	
		2,577	
Add excess of mother's income over $750 (an exemption of $400 having been claimed)		50	
		2,627	
Less foreign tax credit —			
Lesser of	150		
or $\frac{1,000}{19,568}$ x 2,627	134		
		134	
Total tax		2,493	
Less tax withheld	1,840		
instalments	500		
		2,340	
Balance owing			$ 153

Examiner's Comments

The most common misinterpretation was to take the words "instalment payments totalling $500" to mean each instalment payment. The points on which candidates most often showed a lack of knowledge were (i) the notch provision, (ii) the medical expense limits, (iii) the treatment of income from bonds given to the wife, and (iv) the calculation of the dividend credit and the foreign tax credit.

BY MELVILLE PIERCE, B.A., LL.B.

The Tax Review

What The Wilson Case Decides

What is the income of a person? That is the basic question posed by our Income Tax Act, upon which all other questions are dependent, yet the Act throws little light upon it: if anything the provisions of the Act tend to confuse it. The above is one's observation after reading, not once but several times, the recent decision of the Supreme Court of Canada in *Wilson* v. *MNR* [1955] CTC 87, where the Court split three to two in its decision.

Briefly the facts were as follows. Wilson, the appellant taxpayer, acquired a business under his father's will which he proceeded to operate in premises devised by his father in trust for appellant, which premises were, however, charged by the testator with an annuity to appellant's mother for her life. In addition to the charge on the land the annuity was further secured by Wilson's personal covenant to pay it, the giving of such covenant by Wilson being a condition precedent to his acquiring the business and the land. The question on the tax appeal was whether or not Wilson was entitled to deduct the annuity payments in computing his annual income from the business. Rand, Kellock and Fauteux JJ. were of opinion that he was entitled to do so whilst Estey and Locke JJ. were of the contrary opinion.

In the view of all three majority Judges, Wilson's personal covenant to pay the annuity was immaterial, the decisive fact being that the land was charged with the payment of an annuity. Here the minority parted company with them; in their view the decisive fact was Wilson's voluntary assumption of a personal obligation to pay the annuity regardless of whether there was sufficient income from the land to pay it.

All three of the majority were of opinion that the land used by Wilson in his business produced an income equal to its annual value (which exceeded the amount of the annuity), and that the annual value formed part of the income of the business. Then, however, comes the crucial question. For if it is conceded that the income from the land forms part of the income from a business carried on upon that land, under what provision of the Income Tax Act is the payment out of that income deductible in computing the income of the proprietor of the business?

It will be remembered that there is no provision in the Act which in terms sets out what may be deducted in computing income or the profit of a business. There is, however, s. 12(1)(a) which provides that in computing income no deduction shall be made in respect of an outlay or expense *except to the extent that it was made or incurred for the purpose of gaining or producing income from a property or business.* Admittedly the words of the exception

have often been taken to be a positive enactment, that is, as if they permitted the deduction of outlays or expenses that fall within its words. Sometimes, indeed, the entire paragraph is read (particularly by the Minister) as if it prohibits all claims for deductions that do not fall within the express terms of the exception.

In previous comments this observer has argued that this last view of the enactment is not only illogical but also impractical and, moreover, that it is contradicted by high authority. To the last may now be added the judgment of the Supreme Court under discussion.

In the *Wilson* case the deduction of the annuity from the business income was held by Kellock and Fauteux JJ. to be allowable on the ground that the annuity (though clearly paid out of the income from Wilson's business) was never part of Wilson's income from the business, because the charge of the annuity on the land diverted income of the business equal to the annuity from Wilson to his mother. For this reason, and notwithstanding that the income from the business passed through Wilson's hands on its way to his mother, its deduction by him in computing his income was not prohibited by s. 12(1)(a) even though the payment of the annuity was not an outlay made for the purpose of earning income from the business. Section 12(1)(a), said Kellock J., applies only in the ascertainment of the income of a taxpayer and therefore has no application to revenue coming into his hands which forms no part of his income.

Rand J., while he appeared to share the opinion of Kellock and Fauteux JJ. as above expressed, also assigned another reason for allowing the deduction. The effect of the charge was, he said, to relate the annuity payments to the enjoyment of the land in the same way as payments for the hire of a machine used in a business are related to the use of the machine, and thus the annuity was deductible under s. 12(1)(a). But fortunately he does not stop there. Fortunately, because the two dissenting Judges expressed the opposite view on this question. Rand J. went on, however, to express views similar to those of the other two majority Judges. Thus, he said, the charge of the annuity on the land upon which the business was conducted had the effect of preventing the possessory value of the land from becoming beneficial income of Wilson even though it appeared in his income. And he then quotes with approval a dictum of Lord Herschell's in *Russell* v. *Town & County Bank*, 13 App. Cas. 418 at p. 425, where that very great Judge said that the annual value of premises exclusively used for business purposes was deductible in ascertaining the profit of the business because the annual value was *an essential element to be taken into account in ascertaining the profit even though there was on specific provision in the British Act expressly permitting its deduction.*

The two dissenting Judges, Estey and Locke JJ., were of opinion that the annuity was not deductible from the business income, on the ground that payment of the annuity was, in the circumstances, Wilson's personal obligation and the payment was therefore not properly chargeable to the income from the business. Since in their view there was no diversion of income from the business to the annuitant it became unnecessary for them to ask by what authority the annuity was deductible in computing

the income of the business. (As mentioned above, however, they both disagreed with the view of Rand J. that the annuity was deductible under s. 12(1)(a) as being a payment analagous to money compulsorily paid for use of business premises, such as rent, and Estey J. cited the leading case of *MNR* v. *Dom. Natural Gas Co.* [1941] SCR 19 in support.)

It is always dangerous to seek to draw general principles from a judgment, but at least it can be said that the case may prove to be an authority for the following propositions: (1) Where land is given by will to A charged with payment of an annuity to B, the income from the land to the extent of the annuity forms no part of the income of the devisee but is income only of the annuitant, and this is so notwithstanding that the devisee has, as a condition of obtaining the land, given his personal covenant to pay the annuity whether or not the income from the land is sufficient. (2) The annual value of land used by its owner in carrying on a business forms part of the income from that business. (3) A deduction may be made from the revenues of a business of such part of the income of the business as forms no part of the income of the proprietor of the business. (4) Section 12(1)(a) does not operate to prevent the deduction of an outlay made out of such part of the income of a business as forms no part of the income of the proprietor of the business even though the outlay is not made for the purpose of earning income from the business.

RECENT TAX CASES

Wilson v. M.N.R.

(Supreme Court of Canada, Rand, Kellock, Estey, Locke and Fauteux JJ., April 6, 1955)

Income — Nature of — Devise of land and business on condition that devisee enter into covenant to pay annuity out of income from business — Whether covenant personal — Whether annuity payments deductible from business income — Annual value of business premises is element of income — IWTA s. 6(1)(a), 6(1)(c); ITA s. 12(1)(a)

Appellant's father, who during his lifetime carried on a business on certain land which he owned in Victoria, died in January 1945 and by his will devised the land and business to appellant on condition that appellant covenant to pay testator's widow $500 a month for life. By the will the land was charged with performance of the covenants and title to the land was to be held by trustees during the widow's life, subject to appellant's right to require the trustees to sell the land and to purchase another business or, in lieu of purchasing another business, to pay the income from the sale proceeds to appellant subject to the performance of his covenants and on the widow's death to pay appellant the corpus. If appellant failed to enter into the covenant the trustees were to sell the land and business, set aside sufficient of the proceeds for the widow's annuity, pay the remainder of the income to appellant during the widow's

life and on her death pay him the corpus. Appellant accepted the gift, made the covenants and carried on the business, title to the land being held in the names of the trustees. In his tax returns for 1946 to 1949, both inclusive, appellant claimed as deductions from his business income the amounts paid to his mother under the covenants. The Minister disallowed the deductions, and appellant's appeal to the Exchequer Court of Canada was dismissed by Cameron J. [1954] 1 Tax Rev. 200. Appellant appealed to the Supreme Court of Canada.

Held (per Rand, Kellock and Fauteux JJ., Estey and Locke JJ. dissenting), appellant was entitled to succeed.

Per Rand J.: The annual value of land used by its owner in carrying on a business is an element of income, and since no deduction is allowed by our Income Tax Act for that value it renders his income from the business so much the greater than it would otherwise be. In this case where the annuity to the owner's mother was charged exclusively on that land as a current annual payment, the payments thereof were wholly, exclusively and necessarily related to the enjoyment of that possessory value and were as equally related to the income from the business as current charges for the use of a machine would be, and such payments were therefore within IWTA s. 6(1)(a) and ITA s. 12(1)(a). The appellant's personal liability for the payments was merely a collateral remedy which did not affect the economic realities. *Russell* v. *Town & Country Bank*, 13 App. Cas. 418 per Lord Herschell at p. 425; *Stevens* v. *Boustead* [1918] 1 K.B 382 per Warrington L.J. at p. 389; *Moffatt* v. *Webb*, 16 Com. L.R. 120, per Griffith C.J. at p. 125; Isaacs J. at p. 137; *Egerton-Warburton* v. *Dep. Fed, Com'r of Taxation*, 51 Com. L.R. 568; *Usher's Wiltshire Brewery Ltd.* v. *Bruce* [1915] A.C. 433, per Lord Sumner at p. 469, applied. This is not a case of a person purchasing property in consideration of an annuity: *Calvert* v. *Com'r of Taxes*, 40 Com. L.R. 142; *Bern* v. *Com'r of Taxation* (1950) 9 Aus T.D. 148 (N.Z.); *Tata Hydroelectric Agencies Ltd.* (*Bombay*) v. *Com'r of I.T.* [1937] A.C. 685, distinguished. This case is similar in principle to the case of a Court order charging a devisee's land with payment of a monthly sum to a testator's widow, as in *Raja Bejoy Singh Dudurhia* v *Com'r of I.T. Bengal*, 1 Ind. Inc. Tax Rep. 135 (P.C.), and to the case of a gift by will subject to a charge: in such case the benefit conferred is what remains after the deduction of what is reserved, which beneficially never becomes income of the taxpayer.

(In this case it was established in evidence that the annual value of the land was greater than the amount sought to be deducted.)

Per Kellock J.: The testator made appellant personally liable for payment of the annuity but also expressly charged the annuity on the land and that charge operated to divert from appellant to the widow income to that extent and such diverted income did not form part of appellant's income. In *re Lester* [1942] 1 Ch. 325; *Parker* v. *Judkin* [1931] 1 Ch. 475; *Dalmer* v. *Dashwood*, 2 Cox 378; *Cupit* v. *Jackson*, 13 Ont. Pr. 721 at p. 723; *London County Council* v. *A.-G.* [1901] A.C. 26, per Lord Davey at p. 42; *Raja Bejoy &c.* v. *Com'r of I.T., supra*, applied. The annuity cannot, of course, be deducted from the taxpayer's income from sources other than the land charged, but as the land is used by appellant in carrying on business the land does produce income which is merged in appellant's hands with the gross receipts from his business, the amount of such income being equal to the rentable value of the land (which the evidence showed was more than the annuity). IWTA s. 6(1)(a) and ITA s. 12(1)(a) have no application here as they apply only in the ascertainment of the income of the taxpayer and do not apply to revenue coming to his hands which forms no part of his income. For the same reason, s. 6(1)(c), which prohibits the deduction of the annual value of land, does not apply.

Per Fauteux J: The land charged and actually used in the business of appellant did produce an income which, equal to the rental value of the land, was merged with the gross receipts of the business. But the charge on the land, imposed as a condition precedent to the right of beneficial ownership, diverted from the business, in a measure equal to the amount necessary to its satisfaction, such income it produced and thus, to this extent, prevented it becoming income to the appellant. In this view, the provisions of IWTA s. 6(1)(a) and (b) and ITA s. 12(1)(a) and (b) are of no application in this case.

Per Estey J., dissenting: Appellant's obligation to pay the annuity arose under his personal covenant, and existed whether he derived any benefit from the land or continued to carry on the business or not. The payments were therefore an application by appellant of part of his income in a particular way and not the payment of money which had never become part of his income, and they therefore did not fall within the language of IWTA s. 6(1)(a) or of ITA s. 12(1)(a) so as to be deductible in computing appellant's income from his business.

Per Locke J., dissenting: The annuity was paid in consequence of obligations voluntarily assumed by appellant and formed part of the consideration paid or agreed to be paid by him as a term of receiving, in addition to the lands and premises, all of the assets of his father's business. The amounts so paid were neither wholly, exclusively, and necessarily laid out for the purpose of earning the income of the business nor outlays or expenses for the purpose of gaining or producing income from a business of the taxpayer within the meaning of either IWTA s. 6(1)(a) or ITA s. 12(1)(a) respectively. Had appellant ceased to carry on the business following the making of the covenants the annuity would still have been payable by him. There is no charge upon either the business bequeathed to appellant or on the income from that business, but upon the land alone, and it is not a charge to which the land is subject by law but only upon the appellant electing to acquire the business and the land and making the required covenants. The annuity was therefore paid by reason of his personal covenants. *Raja Bejoy &c* v. *Com'r, supra,* distinguished. The payments were on account of capital and prohibited from deduction by IWTA s. 6(1)(b) and ITA s. 12(1)(b), being part of the consideration which appellant agreed to pay as a term of acquiring the assets of the business theretofore carried on by his father.

Appeal allowed

INCOME TAX APPEAL BOARD CASES

Fabio Monet, Esq., Q.C. (Chairman), Cecil L. Snyder, Esq., Q.C. (Assistant Chairman), W. S. Fisher, Esq., Q.C. and R. S. W. Fordham, Esq., Q.C.

247 v. M.N.R.

Stock Rights — Employee's option to buy shares — Whether benefit — Time benefit arises — Valuation of — ITA (1951) s. 5(a)

On April 28, 1951, appellant verbally accepted an oral offer made to him by the president of an oil company to be the company's general manager at $18,000 a year with the right to acquire 45,000 shares of the company's capital stock at a set price. On May 7, 1951 a written contract of employment for a period of 5 years was executed, and on May 19 a further contract was made giving appellant an option to purchase up to 15,000 shares of the company's stock at $5 a share on or before May 15, 1952 and an option to purchase a further 15,000 shares at $4 a share at any time after May 15, 1952 and

before May 15, 1953, and an option to purchase a further 15,000 shares at $3.50 a share within one year after the expiration of the last mentioned period. Appellant exercised the first option on May 2, 1952 and the second option on June 11, 1952. On May 19, 1951, the day on which the option agreement was made, the market price of the shares was $5.85. Appellant was assessed to income tax for 1951 on the footing that the grant of the options conferred on him a benefit of the difference between the market price of the shares on May 19, 1951 and the price at which he subsequently bought the shares, the whole amounting to $40,500, and that such benefit was chargeable to tax under ITA s. 5(a).

Held (Mr. Fordham), dismissing appellant's appeal, upon the exercise of the options in May and June, 1952, the advantage gained is deemed to relate back to the date of receipt of the document granting the option. See Hannen and Farnsworth "The Principles of Income Taxation" (1952), ch. 15, and *Humphrey* v. *Gold Coast Selection Trust Ltd.* (1948), 30 T.C. 210 at p. 238. The grant of the option was a "benefit" to appellant within the meaning of ITA s. 5(a). See also *Weight* v. *Salmon* (1953), 19 T.C. 174; *Ede* v. *Wilson & Cornwall* (1945), 1 A.E.R. 367; *126* v. *MNR*, 53 DTC 419, 9 TABC 241.

Mar 18/55 *Dismissed*

Editorial Note: As the learned judge points out, ITA s. 85A as enacted in 1953 now applies to employees' stock options granted in 1953 and since, and that enactment makes it clear that in a case such as this the benefit is to be valued not as of the date of the grant of the option but as of the date of its exercise. Under s. 8(1)(c)(iii) where a stock option is granted to all the common shareholders of a company the benefit is not chargeable, but stock options to preferred shareholders are still within the taxation fold under s. 8(1)(c). It would seem that the considerations which govern the case before Mr. Fordham would also govern a case arising under s. 8(1)(c). One may ask if a distinction ought not to have been made here by the learned judge between the two options granted appellant on May 19, 1951. The first option was exerciseable on that date but the second option was not exerciseable until nearly a year later. The value of a present right to buy something at less than its present price is surely different from the value of a right to buy the thing at a future date at less than its present price. This commentator also is unable to see the bearing of Lord Simon's well-known *dictum* in *Humphreys* v. *Gold Coast Selection Trust, supra,* which was concerned with the computation of annual business profits in accordance with accountancy principles where the vendor of property takes shares in a company instead of money.

A CORRECTION

In the July issue of this journal, the case of *Fitzpatrick* v. *MNR* was stated to have been dismissed. Actually, of course, this appeal was allowed, as one would expect from reading the reasons for judgment set out in the abridgment.

The editor of The Tax Review regrets any confusion this error may have caused his readers.

BY PETER C. BRIANT, B.COM., C.A.

Current Reading

Assistant Professor,
McGill University

ARTICLES OF INTEREST

One of the problems a successful chartered accountant has to face, nowadays, is how to find time to keep abreast of current literature in accounting, auditing and related subjects. Since the war there has been a substantial increase in the volume of our professional books and magazines, until the point has now been reached where it is virtually impossible for one man to read everything he wishes.

Consequently, each month in this department there will be presented digests of interesting and important articles chosen from all areas of business activity, with particular emphasis on those possessing accounting, economic and financial implications. In addition, books will be reviewed by able men who have volunteered to do this. Finally, the titles and sources of additional articles will be often listed without comment.

The editor will always be happy to hear from members who have noted articles which they think would interest our readers.

PROFESSIONAL PERSPECTIVE

"Perspective in the Practice of Accounting" by Dixon Fagerberg, Jr., *The Accounting Review*, April 1955, p. 211.

Mr. Fagerberg, who is widely known as editor of the "Practitioners Forum" in *The Journal of Accountancy*, urges accountants to look for meaning and inspiration in their professional activities, not treating them as mere routine work. This work, he says, entails among other things writing, reading, teaching, observing and experimenting.

> "Get It Down,
> "Don't Ration Quality,
> "Make It Short."

This sums up Mr. Fagerberg's advice to those accountants who ask how to write a letter or report. Here, in a nutshell, is the answer to be heeded by those whose success as accountants may well depend on their ability to express themselves in the King's English. Stressing the importance of varied reading outside the field of technical accounting literature, since the relationship between our writing and our reading is close, he continues: "The leaders of our profession are better accountants and know more about accounting subjects because they know more about non-accounting subjects."

With the statement that teaching is an important part of the practice of accounting, Mr. Fagerberg correctly emphasizes the need for a thorough knowledge of principles, and not the accumulation of a mass of facts from which principles are ultimately derived. To him, this is of fundamental importance, for he states: "It seems to me that personal success or failure in our profession largely depends on

whether a man can grasp and apply principles."

How many of us can say that in our own offices we use journal and general ledger paper and binders that come up to the same high standards we prescribe for our clients? Mr. Fagerberg would have each practitioner ask himself this kind of question. He believes that by such observation in our own offices, which he regards as laboratories of accounting art and science, we can improve our working environment and attitude; and that by reporting on our findings to our fellow practitioners we can add a substantial body of exciting new material to our literature.

The author concludes his advice with a warning against the dangers of over-specialization; for, together with independence and integrity, the professional accountant's greatest resource is his *relative* expertness over the entire financial front.

DEPRECIATION

"Accelerated depreciation being met with mixed reactions", *The Controller*, May 1955, p. 236.

The results of a National Industrial Conference Board survey of 167 U.S. manufacturing companies are reported. These show that about 50 of the 75 companies which have changed their depreciation policies, to take advantage of the accelerated depreciation methods now permitted under the 1954 U.S. tax code, do not expect the change to influence their capital spending policy. They expect demand for products, advantages of technological improvements, and the availability of cash to remain the dominant considerations.

One may well speculate to what extent Canadian experience with the diminishing balance method of depreciation, called "accelerated depreciation" in the United States, bears out these conclusions. It might be recalled that it was with the object of stimulating industrial investment that diminishing balance depreciation was introduced in this country.

In support of the new system, those companies which have converted to the accelerated depreciation method are reported as stating, "[It] not only provides for a more rapid recovery of capital funds but also reduces current taxes and results in a more realistic valuation of assets."

The relative popularity of the "sum-of-the-years-digits" method over alternative methods is an additional interesting disclosure. This method is apparently not used in Canada. But in principle, though not in application, it is similar to the reducing balance and accelerated depreciation methods. Because it allows the recovery of approximately three-fourths of the total cost of new property during the first half of its useful life, it has been adopted by some U.S. companies. It bestows the additional benefit of allowing the whole of the cost of an asset to be recovered over its useful life. This is not the case with the normal diminishing balance method, which necessarily leaves a scrap value.

About 58 of the companies surveyed reported that they are continuing to use the straight-line method for the time being. The following factors influenced their decision:

1. The value of new equipment is small;
2. The nature of the equipment does not lend itself to accelerated depreciation;

3. Apprehension over the Bureau of the Internal Revenue's interpretation of the new law;
4. The desire for a stable rate of write offs;
5. A preference not to gamble on tax rates; and
6. Satisfaction with the straight-line method.

CHANGING PRICE LEVELS

"A Case Study of Price-Level Adjustments" by Donald A. Corbin, *The Accounting Review*, April 1955, p. 268.

A number of case studies involving price-level adjustments have appeared in accounting magazines and books in recent years. But this claims to be the first to have studied the effects of price-level changes on the accounts of a department store.

While this brief report only summarizes the results of the study, it does describe at length the statistical methods used to adjust the accounts for the 1946 fiscal year. (The entire study covers the 20-year fiscal period from 1933 to 1952 inclusive.) Detailed tables showing the results of the study appeared in *The Journal of Accountancy*, April 1954.

An overstatement of the company's growth by 50% to 100% is one of the interesting conclusions to have emerged from this work. For example, the range of sales increase, which was conventionally reported as from $12 million to $64 million, is shown only to have been from $25 million to $64 million when all dollars are converted to a constant size. As one would expect, Professor Corbin's other conclusions lend additional force to the argument that business reports should in some way reveal, at least to management, the distortion of business income resulting from price-level changes.

Readers interested in the methods used to adjust the accounts for the 1946 fiscal year will find stimulating material in this article. The adjustment of the retail inventory is particularly fascinating.

BOOK REVIEWS

"The Inventories" by Frederick Staples, *Counting House Publishing Company*, Thiensville, Wis., 1955, pp. 113, $2.00.

This short book is essentially a procedures manual which any accountant will find useful to have at hand for reference purposes.

The subjects covered include pricing at cost and market, items of stock and quantities, sample inventory tags and forms, auditor's inventory-taking instructions and questionnaires. The author's approach is based on generally accepted practice and his own experience in public accounting. Though brevity is stressed, the author's analysis of live merchandising costing, which appears under 28 separate sub-titles, is indicative of the wide range of material covered.

Of interest, because of its income tax implications, is the section on the *Lifo* method of costing. In Canada, favourable decisions have been rendered by the Exchequer and Supreme Courts in the *Anaconda* case. Pending a ruling on a government appeal to the Privy Council, however, this section has only potential application to Canadian practice.

While the author discusses current accounting practice with reference to inventories, this book should not be regarded as a major contribution but

rather as a clarification of current inventory problems. No reference has been made to the auditor's legal responsibility, for instance, and no legal cases have been cited. These omissions do not detract from the usefulness of this book; but, in this reviewer's opinion, they are essential aspects of the whole subject.

"The Inventories" will give the young accountant an appreciation of the complexity of stock valuation, and the experienced practitioner a review of the high standards expected when statements are certified.

IRVING R. STERLING, C.A.

"A Passion For Politics" by Louis Brownlow, Chicago (University of Chicago Press – published in Canada by University of Toronto Press), 1955, pp. xii – 606, $7.50.

Louis Brownlow is today best known for his contribution to the practice and the study of public administration. His career in that field began with his appointment as Commissioner for the District of Columbia by President Wilson in 1915, and included a long association with the Public Administration Clearing House, culminating with his appointment as chairman of the President's Committee on Administrative Management.

It is not, however, with this phase of his career that this volume is concerned. It is subtitled "The Autobiography of Louis Brownlow: the First Half", and carries his life only to the day of his appointment as District Commissioner. Up to that time he was a well-known member of that able breed of young Southern journalists which included such varied personalities as Irvin S. Cobb and Grantland Rice. At 21 Louis Brownlow was a reporter on the *Nashville Banner*. Within three years he had become city editor of the *Louisville Times* and two years after that he succeeded Cobb as managing editor of the *Paducah News Democrat*. But a 72-hour week which began at 6.30 a.m. every morning was too much for his health, and it was as Washington correspondent and roving journalist for a news agency that he was to spend most of his career as a newspaperman.

The title *A Passion for Politics* aptly describes both his life and his book. From a very early age he was involved in politics, and his memoirs are full of absorbing details of the political life of the South in the period after Reconstruction. He says at one point "Nearly all Brownlows I had known had suffered a common curse. . . . It was the curse of total recall. . . . All Brownlows could remember everything. All Brownlows could recall every tiny detail, and no Brownlow had been lacking in willingness to retell to every listener all that he could remember or recall." Louis Brownlow was even late for his own wedding because he could not bear to interrupt an elderly relative in an anecdote. And his anecdotes are good – some of them are very good. But there are so many of them. As he candidly confesses, the editorial staff of the University of Chicago Press excised about 500 pages from his original typescript. They were wise. What is left contains not only a mine of material which will delight any student of politics, but will make pleasant reading for almost everyone.

J. R. MALLORY

Quebec Institute Celebrates its 75th Birthday

S. R. CAMPBELL

SEVENTY-FIVE YEARS ago, on July 24, 1880, there came into being the "Association of Accountants in Montreal", the first body of accountants to be incorporated on the continent of North America. Incorporation crowned more than a year of activity and effort on the part of the ten founders who met together in a preliminary meeting on June 11, 1879 in the Long Room of the Mechanics' Institute in Montreal, located where the Royal Bank Building now stands at St. James and St. Peter Streets. The ten original members were C. Beausoleil, James Court, David J. Craig, Thomas Darling, John Fair, L. J. Lajoie, John McDonald, Alexander Moffat, A. F. Riddell and Philip S. Ross. James Court was the first president.

In 1927 the name of the association was changed to "The Society of Chartered Accountants of the Province of Quebec" which in 1946 became in turn "The Institute of Chartered Accountants of Quebec".

Only two incorporated accounting bodies antedate the Quebec Institute, "The Institute of Chartered Accountants of Scotland", founded in 1854, and "The Institute of Chartered Accountants in England and Wales", which was incorporated in May, 1880.

The original funds of the Quebec association were provided by an entrance fee of $20 and a subscription of $10 per member. Apparently the affairs of the infant association were managed with appropriate Scottish thrift, for there was no levy of fees for the years 1881, 1882, 1883 and 1884, there having been no call for funds!

In 1884 a joint advertisement in the form of a "professional card" was ordered in the Montreal *Gazette*, the cost to be $50 per annum. It may be of interest that this advertising is still being carried on, although in expanded form and at greater cost.

The association pursued the even tenour of its ways for some years, until the Council meeting of November 10, 1898 when a letter was submitted suggesting that the Council approve the adoption of loose leaf ledgers. Council could not see its way clear to sanctioning such a radical change in accounting procedure. The proposal was then referred to the next quarterly meeting of the association which saw no reason to depart from the views of the Council and the matter was dropped.

In 1928 the question arose as to the admission of women to the so-

ciety. Advice was received from legal counsel to the effect that women could *not* be admitted as apparently the word "person" in the charter did not include women. In order to overcome this defect a bill was presented to the provincial legislature amending the charter to read "person of either sex" but it was thrown out without a vote being taken. Shortly thereafter, the Privy Council, hearing a case for the admission of women to the Senate of Canada, decided that the word "persons" included members of both sexes. Consequently, in 1930 Miss Charlotte N. Howell was admitted to membership as the first woman member.

In 1946 the provincial legislature passed an Act to regulate the practice of accountancy and auditing by which the name of the society was changed to "The Institute of Chartered Accountants of Quebec". This Act made the Institute sole authority on matters relating to public accounting in the Province of Quebec. It provided that all members of the Corporation of Public Accountants of the Province of Quebec and the Institute of Accountants and Auditors of the Province of Quebec should become members of the Institute. In addition, the acquired rights of a number of other persons who were practising as public accountants in the Province or who were members of certain other accounting bodies were protected. In some cases persons who met certain requirements were granted membership in the Institute while others were granted licences to continue to practise in the Province as registered public accountants. The then existing members of two other accounting bodies were also permitted by the Act to retain their rights to practise.

In its first 20 years of existence, the association saw its membership increase by 100% – from 10 members to 20. By 1910, membership had risen to 47, and in 1920 there were 93 members. Growth since then has been extremely rapid, membership rising to 301 in 1930, to 618 in 1940, and to 1367 in 1950. At April 30, 1955 membership was 2095.

A number of events marking the 75th anniversary are scheduled to take place during 1955, perhaps the most noteworthy of which will be the occupancy by the Institute of its fine new building on Lagauchetiere Street West, Montreal. Official opening ceremonies are scheduled for September 26 and it is anticipated that the Honourable Maurice Duplessis will officiate. A second noteworthy event will be the 75th anniversary banquet in December at which the Rt. Honourable Vincent Massey, Governor General of Canada, will be the guest of honour.

The history of the Institute over three-quarters of a century is an impressive record of the whole-hearted attention of officers and members alike to the development of its aims and objectives and their continuous efforts to improve the status of the profession.

NEWS OF OUR MEMBERS

Alberta

Clarke & Gordon-Cooper, Chartered Accountants, announce the retirement from partnership of George U. Clarke, C.A. who has accepted an appointment with General Petroleums of Canada Limited. The practice of the profession will be carried on by F. Gordon-Cooper, C.A. and Hugh L. Fraser, C.A. under the firm name of F. Gordon-Cooper & Co., Chartered Accountants, with offices at 204 Wilson Electric Bldg., Calgary.

British Columbia

Paul Rising & Co., Chartered Accountants, announce the removal of their offices to their new building at 2065 W. 4th Ave., Vancouver.

Paul F. Lee, B.Com., C.A. announces the opening of an office for the practice of his profession at 73 E. Pender St., Vancouver.

Roberts, Munro & Co., Chartered Accountants, Duncan, announce the opening of an office at 2020 Douglas St., Victoria.

Rickard, Crawford & Co., Chartered Accountants, announce that Ronald M. Mill, B.Com., C.A. has been admitted as resident partner in their New Westminster office and David A. Moulding, C.A. has been admitted as resident partner in their North Vancouver office.

S. Thomas Fry, C.A. announces that he has assumed the practice formerly carried on by A. P. Gardner & Co. at Quesnel. Henceforth he will carry on the practice under his own name with offices at 318 Reid St., Quesnel.

Manitoba

McDonald, Currie & Co., Chartered Accountants, announce the opening of an office for the practice of their profession at 304 Lindsay Bldg., 288 Notre Dame Ave., Winnipeg.

New Brunswick

E. R. Fowler, C.A. announces the admission to partnership of Ralph B. Noble, C.A. Henceforth practice of the profession will be carried on under the firm name of Fowler, Noble & Co., Chartered Accountants, with offices at 403 St. George St., Moncton.

Ontario

Alex G. Rankin, C.A. has been appointed vice-president (finance) of British Columbia Forest Products Limited, Vancouver.

Williamson, Shiach, Sales, Gibson & Middleton, Chartered Accountants, Toronto, announce the admission to partnership of Kenneth J. Bryant, C.A.

Ross & Dessen, Chartered Accountants, announce the removal of their offices to Ste. 404, 696 Yonge St., Toronto.

Laurence C. Crawford, C.A. announces the admission to partnership of Donald W. Burley, C.A. Henceforth practice of their profession will be carried on under the firm name of Crawford, Burley & Co., Chartered Accountants, with offices at 437 Queen St., Niagara Falls.

Newly elected president of the Toronto Chapter of the Institute of Internal Auditors is A. E. Stead, C.A.

A. G. Trickey, C.A. has been appointed controller of Robertson-Irwin Ltd., Hamilton.

Hugh Baker, C.A. has been appointed chief accountant and office manager of Robertsteel (Can.) Ltd., Hamilton.

George Moller, D.Jur., C.A., R.I.A. has been elected a director of H. H. Robertson Co. Ltd., Robertson-Irwin Ltd. and Robertsteel (Can.) Ltd.

M. S. Greer, C.A. announces the admission to partnership of R. Howard McRae, C.A. Henceforth practice of the profession will be conducted under the firm name of Greer, McRae & Co., Chartered Accountants, with offices at 41 Coldwater St. E., Orillia.

F. Warren Hurst, C.A. has been appointed comptroller of the Consumers' Gas Co., Toronto.

Sydney Shoom, C.A. announces the opening of an office for the practice of his profession at Ste. 208, 454 King St. W., Toronto.

Quebec

Stevenson, Walker, Knowles & Co., Chartered Accountants, Bank of Nova Scotia Bldg., Montreal, announce the change of firm name to Stevenson, Blakely, Blunt & Co., Chartered Accountants.

F. B. Tilton, C.A. has been appointed assistant to the general woods manager, Consolidated Paper Corp. Ltd., Montreal.

Saskatchewan

W. T. Scott & Co., Chartered Accountants, announce the admission to partnership of Arnold Columbia, B.Com., C.A. Henceforth practice of the profession will be carried on under the firm name of Hamilton, George, Taylor, Columbia & Co., Chartered Accountants, with offices in Saskatoon and Melfort.

INSTITUTE NOTES

Golden Jubilee Meeting of the B.C. Institute

The B.C. Institute celebrated its golden jubilee with a 2-day meeting on June 23-24 at the Hotel Vancouver. Highlight of the event was a luncheon at which Dr. Brock Chisholm was the guest speaker. Other special guests were Hon. R. W. Bonner, Q.C., Attorney-General of the Province; Oscar F. Lundell, president of the Vancouver Bar Association; and Lorin H. Wilson, president of the Washington Society of Certified Public Accountants.

Fellowships in the Institute were awarded to J. L. Helliwell, J. E. McIntosh and Thomas Bailey.

Annual Meeting of Manitoba Institute

In recognition of his outstanding service, D. S. Lofthouse, the oldest practising member of the Manitoba Institute, was elected to fellowship in the Institute at its annual meeting on June 24, 1955. Guest speaker was J. Grant Glassco, president of the C.I.C.A.

Saskatchewan Institute Honours Pioneers

The annual meeting of the Institute of Chartered Accountants of Saskatchewan was held in Regina on June 18. This being the Jubilee year of the Province of Saskat-

chewan, special honour was paid to the pioneers of the Saskatchewan Institute. Members with more than 40 years service to the Institute were guests at a reception and dinner in the evening. A presentation was made to them by retiring president L. E. Fingarson. The pioneers included C. V. Gladwell, F. J. Wilson, Thomas Lax, Regina; W. M. Hurley and C. F. Lidster, Winnipeg; H. L. Crossley, Banff, and B. R. Masecar, Vancouver.

Ontario Institute Notes

Library — Postal Rates: The Post Office has granted the Institute permission to use special library postal rates on books mailed to and from members and students in Canada but outside Toronto. The postage is prepaid in the Institute office and a special return label enclosed. The borrower uses the return label which provides for the return of the book without payment of further postage.

Catalogue: A revised catalogue of all the books and periodicals in the library was sent to all members in July. Students-in-accounts resident in Ontario will receive the catalogue with the text books at the time of their next enrolment.

Information Booklet: A new edition of "Information for Students-in-Accounts" dated June 1955 has been sent to all members and students. A copy of the booklet is being distributed to each secondary school in Ontario through the Guidance Centre information service of the Ontario College of Education.

Course of Instruction Lessons: Several practising firms have been interested in obtaining copies of the lesson material in order to assist their students with their studies. The Board of Instruction has granted approval for the Institute office to make lessons available to firms for this purpose at the cost of 75c for the first lesson and 50c for each additional lesson ordered at the same time.

Practising Members Study Group Committee of Toronto: L. J. Smith, F.C.A. has been appointed chairman of a new committee charged with the job of bringing together small groups of practising members in the Toronto area to discuss problems common to those in public practice. Members wishing to join such groups will be given the opportunity to say so early in the fall. The groups will meet regularly in the evening at the C.A. building to discuss topics of their choice.

Survey of Staff Salaries and Practices: The report on the survey of staff salaries and practices in practising firms was sent out to the 121 participating firms in June. The survey covered 1,572 people of whom 658 were students; 114 of the firms requested that the survey be repeated and of these 67 would like it done annually.

Ontario Students Association

The association now has stocks of blazer crests and lapel buttons which are available to members of the Students Association and to C.A. members of the Ontario Institute. Both the crest and the lapel button are of high quality and attractive design. Members of the Association may purchase the crests at $6.50 and the lapel button at $1.50, while those C.A. members of the Ontario Institute who are not members of the Students' Association may purchase the crest for $7.50 and the lapel button for $2.00. Remittances should be made payable to the Chartered Accountants Students' Association of Ontario and orders should be addressed to the Institute at 69 Bloor Street East, Toronto.

The annual golf tournament of the association was held at the Rouge Hills Club just east of Toronto on June 16. If all those who turned out for the event had completed the full course, searchlights would have been needed to bring the last ones in. Fortunately, the extremely hot day allowed many to drop out at the ninth hole, with honour, and only the hardy or insensible finished out the 18. Low gross winner (for the third year in succession) was Ted Forester. There was a tie for runner-up between Stephen Bearg and W. G. Wilson.

The Toronto and District Softball Championship was fought out among 23 firms, all more or less serious contenders. The play-offs were held in early July and Glendinning, Jarrett and Campbell have been declared the winners — again!

C.A. Association of Western Ontario

At its annual meeting on June 2 the C.A. Association of Western Ontario elected the following officers for the 1955-56 year: *president,* J. A. Adams;*immediate past president,* S. H. Humphreys; *vice-presidents,* W. A. Bailey, J. Robinson, T. P. Abel, G. Stone; *secretary,* M. Aziz; *treasurer,* K. G. Summers; *auditor,* R. Woods.

Hamilton and District Chartered Accountants Association

Robert D. Isbister C.A., secretary-treasurer of Royal Oak Dairy Limited, was elected chairman of the Hamilton and District Chartered Accountants Association for the year 1955-56 at the annual meeting held June 21 at the Waterloo Golf and Country Club, Galt. The following members were elected to the executive committee for 1955-56: S. G. Jackson, L. H. Johnston, C. G. Robinson, G. H. Smith and W. G. Thompson of Hamilton; L. H. Digby, Brantford; W. W. Pollock, St. Catharines; and M. P. Greenhill of Galt.

The annual meeting was preceded by the annual golf tournament and the golf prizes were presented by G. E. F. Smith, F.C.A. of Hamilton.

Hamilton Students Meet

The Hamilton and District Students Association held its annual golf and dinner followed by a business meeting on June 24, 1955. Mr. Buck, registrar, was special guest for the occasion which was one of the most successful in recent years, with over 85 members in attendance.

Officers elected for the 1955-56 term were: David Lay, *president;* Paul Green, *secretary;* Baye Wickham, *treasurer.*

News from Nova Scotia

The annual meeting of the Institute of Chartered Accountants of Nova Scotia was held on June 20 at the Nova Scotian Hotel. J. Grant Glassco, president of the C.I.C.A., was a welcome guest of the Institute and special speaker at the preceding dinner.

Students of the Atlantic Provinces will have a splendid opportunity to obtain last minute instruction and assistance before writing their examinations this year. For the second year, an ambitious seminar has been arranged under the leadership of Professor Wilfred Berman, C.A., of Dalhousie University. In 1954, the program of tests and lectures for students preparing for final examinations proved so successful that the 1955 program has been extended to include primary and intermediate students as well.

Dalhousie University and the Institute of Chartered Accountants of Nova Scotia will be joint hosts to the students who will be housed at the men's residence of the university during the period September 18 to September 24. The university has kindly donated the use of its facilities and the member firms of the Institute have agreed to cooperate by permitting their students to attend the seminar.

The seminar is by no means limited to Maritime students and students of other Provinces are invited to attend should they be in the neighbourhood of Halifax at that time or should they wish to make arrangements directly with the university.

The editor welcomes information for this column. News of members and provincial Institutes' activities should be received by the 14th of the month to appear in the following issue of the journal.

CLASSIFIED ADVERTISEMENTS

Rates: *Positions wanted, $7.00 per column inch; Positions offered, $10.00 per column inch; Open rate $17.00 per column inch.*
All replies to box numbers should be sent to The Canadian Chartered Accountant, 69 Bloor Street East, Toronto 5, Ontario.

Closing date is 14th of preceding month

ACCOUNTANT

For responsible position as assistant to hospital comptroller. Please apply in writing giving full information regarding experience, background and references to Executive Director, Jewish General Hospital, 3755 Cote St. Catherine Rd., Montreal.

PRACTICE WANTED

Firm of chartered accountants desires to purchase practice in Toronto or Southern Ontario. Box 493.

POSITION WANTED

Ambitious chartered accountant, age 30, presently in public practice, desires position with practising chartered accountant, preferably in the west, with a view to partnership or succession of practice. Reply to Box 494.

POSITION OFFERED

Industrial concern in Niagara Peninsula requires accountant, age 25 to 35, with university or accounting degree. Previous industrial experience not necessary. Must have leadership qualities, initiative and ability to accept responsibility. Box 495.

REPRESENTATIVE AVAILABLE

C.A. practising in Edmonton desires to become representative for a firm of chartered accountants wishing to locate in Edmonton. Box 496.

WANTED

Young progressive firm of chartered accountants, situated in south-western Ontario, requires C.A. or senior student. Will consider partnership with qualified applicant. All replies in confidence. Box 497.

STUDENT

Intermediate required for chartered accountant with extensive practice. Partnership available for qualified man on graduation. Salary according to experience and ability. Box 500.

VICTORIA, B.C.

Progressive chartered accountant firm in Victoria has opening for qualified chartered accountants. Please reply in writing with full particulars as to age, experience, etc. Applications will be held in confidence. Box 498.

CHARTERED ACCOUNTANT

B.Com., age 30, 6 years professional and industrial experience, desires responsible position in profession or industry. Box 499.

SENIOR STUDENT OR CHARTERED ACCOUNTANT WANTED

Senior student or recent graduate for old established Northern Ontario firm to open branch office when qualified. Good opportunity to create a new office. Apply to Box 502.

SWEETNESS AND LIGHT

HERE IS A story for the birds reported recently by Arthur Edson of the Associated Press.

It seems that a 2-year-old blue parakeet named Jo-Jo got an interview this summer with the chief of U.S. tax collectors and former president of the American Institute of Accountants, T. Coleman Andrews.

Jo-Jo wanted a refund.

Although the bird is said to have a vocabulary of 60 words, he wasted none of them on Andrews. In what must have been the most unusual tax hearing ever held, Jo-Jo resisted all efforts to get him to talk, leaving that chore exclusively to his lawyer, Robert Mayer.

Most of the time Jo-Jo pecked away at Andrews' teeth or ear, or ran impishly from shoulder to shoulder in a manner most surprising for a distressed taxpayer.

At issue was this:

The Kay Jewelry of Atlanta, Ga., one of those easy credit outfits, had a contest to see which parakeet could learn to say: "It's okay to owe Kay."

Jo-Jo did the trick, won $500 for his owner, and became an employee of Kay, going from branch store to branch store to utter the magic words.

During the year Jo-Jo earned $615, frugally stashed it away in the bank and paid both income and social security taxes.

But when everything was added up, his net earnings came to less than the taxable minimum of $600, and the question arose: Was Jo-Jo entitled to a refund?

Well Andrews went along with the gag, and soon a score of newspapermen and photographers were on hand for the historic event.

The bird's lawyer made his pitch, and was doing splendidly until Andrews interrupted: "How much are you paying this bird?"

"About $15 a week," Mayer said.

"Then you are not paying him the minimum wage," Andrews said.

He suggested that all sorts of desperate things might befall the Kay people, including confiscation of property. Here Andrews came up with the best pun of a bad day, "In which case," Andrews said, "you may be literally giving me the bird."

Anyway, Andrews said, the complaints should be made to the local office, and Mayer said that's what he would do. And they both said the same thing over three times, until the television people were satisfied.

* * *

Have you heard about the Italian woman, not long in Canada, who went into a bank and asked the teller: "Please, can I maka da loan?"

Teller: "You'll have to see the loan arranger."

Woman: "Who, plis."

Teller: "The loan arranger."

Woman: "Oh! You meana da man who'sa yellin' mucha 'Hi-yo Silver'?"

JEAN VALE

PROFESSIONAL CARDS

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Roy Building - - - - - Halifax, N.S.

ROSS & ROBINSON
Barristers and Solicitors
Canadian Bank of Commerce Chambers - - Hamilton, Ont.

BORDEN, ELLIOT, KELLEY, PALMER & SANKEY
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ALAN DIGNAN, Q.C.
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